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Volume Tables and Species/Product Correction Factors for Standing Softwoods and Hardwoods in Nova Scotia

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INTRODUCTION

Volume tables have been provided in Nova Scotia's Forestry Field Handbook since the first edition in 1983. Earlier editions included tables that allowed estimation of merchantable volume based on average height and basal area measurements. In the latest edition (NSDNR 1993), these tables were refined so that volume adjustments could be made according to variation in average tree diameter. This made it necessary to estimate average diameter in addition to average height and basal area before making volume estimates. Some handbook users have requested a return to the simpler format, whereby diameter data are not required for volume estimates. It is the purpose of this report to provide these simpler tables for those cases when accuracy requirements can be relaxed. In addition, more detailed tables (which are consistent with the simpler tables) are also included for cases where more accuracy is desired. A description of the basis for volume table calculation; and how volume estimates may vary by species, harvesting system, and tree size are also provided.

METHODS

Volume estimates provided in this document are based on Honer's standard volume tables (Honer et al. 1983). Honer provides tree volume functions based on total height and diameter at breast height (dbh) for major tree species in eastern Canada. They have been tested for their applicability to Nova Scotia by comparison with stem analyses (NSDNR 1996a).

For this report, tree-level values for merchantable tree-length, merchantable shortwood (2.44 m), and sawlog volumes were calculated for several species and diameter-height combinations. These tree-level volumes were then used to generate stand-level volumes in two steps:

(i) volume-to-basal area ratios were calculated for trees in all diameter-height combinations;
(ii) appropriate ratios were multiplied by stand basal area values to give stand-level volumes.

Appropriate volume-to-basal area ratios are those associated with the tree of average basal area (see Appendix 1 for details). The height of a tree of average basal area is approximated by what is called Lorey's height. The diameter of a tree of average basal area is known as the quadratic mean diameter (qdbh), and can be calculated directly from diameter measurements (Husch et al. 1982). To eliminate the need for measuring diameters in the field, assumptions can be made regarding average diameter achieved for a stand of given average height. Data from provincial inventory plots were used to establish these diameter/height relationships for different product classes and species in Nova Scotia (see Appendices 2 and 3 for details).

For this report, generic Softwood and Hardwood Volume Tables (merchantable and sawlog) were produced using volumes calculated for white pine and maple (red and sugar combined). These species represent average tree taper conditions for each group. To allow for more accurate volume estimates when data are available; diameter class, species, and shortwood correction factors were also produced for use with these Tables. In previous Handbook editions, sawlog volumes were listed in Bd.ft./ha. This has been changed to m^3/ha for overall consistency, and to allow estimation of merchantable top-wood volume above sawlog sections.

HOW TO USE THESE TABLES

Merchantable volumes, sawlog volumes, and correction factors produced for softwoods and hardwoods are shown in Tables 1-14. Sampling procedures and use of these Tables depend on whether diameter measurements are, or are not, being taken. General procedures and some examples are outlined below.

Diameters Are Not Measured

Conduct a prism sweep and count the number of trees in each product class (merchantable and sawlog). Tree counts multiplied by the prism basal area factor (BAF) give plot values for stand basal area (m^2/ha) in each class. To obtain estimates of Lorey's height, visually determine a co-dominate tree representative in height for each product class, then measure these heights. Heights and basal area counts are then averaged over all plots in the same stand to obtain per hectare values for look-up in Tables 1, 3, 8, or 10. Estimated gross volumes are read directly off the appropriate Tables. Species and/or shortwood correction factors can then be applied to these values (Tables 5-7 and 12-14). After volume estimates have been determined, reductions should be made for cull and waste.

Diameters Are Measured

Conduct a prism sweep and count the number of trees in each product class (merchantable and sawlog). Tree counts multiplied by the prism basal area factor (BAF) give plot values for stand basal area (m^2/ha) in each class. Measure the diameter of each tree tallied for later use in calculating qdbh by product class (see Appendix 1 for details). To obtain estimates of Lorey's height, visually determine a co-dominate tree representative in height for each product class, then measure these heights. Heights and basal area counts are then averaged over all plots in the same stand to obtain per hectare values for look-up in Tables 1, 3, 8, or 10. Correct volume estimates for diameter using Tables 2, 4, 9, or 11. If correction factors for species and shortwood (as well as diameter) are required, these can be found in Appendix 5. After volume estimates have been determined, reductions should be made for cull and waste.

Notes

- When using Tables 1, 3, 8 and 10 without dbh measurement correction, product size classes are limited to the merchantable and sawlog size classes described in Appendix 2. This is because the volumes listed are based on specific diameter versus height relationships found in these size classes. If diameter measurements are taken for volume correction, product classes are no longer limited by specified diameters. A cruise may change the limits of acceptability for a particular product (for example: decrease minimum sawlog dbh from 14.1 to 13.1 cm for softwoods), or include other products of interest with different dbh requirements (for example: studwood). In all cases, however, volume estimates are limited by top diameter and stump height values listed in Appendix 2.

- The number of tree heights to measure in each plot and/or product class must be assessed on a site by site basis. In uniform stands where several plots are being assessed, it may only be necessary to take heights in every second plot. In non-uniform stands or small stands where only a few plots are established, heights may need to be taken at every plot to get a representative measure.

- Listed shortwood correction factors are intended to illustrate potential losses due to shortwood versus tree-length harvesting. They are based on an assumed average loss of 1.22 m (4ft.) from the merchantable length of the tree, and on no utilization of short pieces. These assumptions may, or may not, be representative of individual harvesting operations.

- Sawlog volume estimates do not include merchantable top-wood. Merchantable top-wood volumes may be significant for hardwoods where sawlog top diameter limits are set at 20.32 cm (8 inches). To estimate top-wood volume, determine diameter class corrected sawlog and merchantable volumes, then subtract sawlog volume estimates (m^3/ha) from merchantable volume estimates (m^3/ha). Volumes must be diameter class corrected so derived merchantable and sawlog volume estimates are based on the same average diameter and height. Top-wood estimates are maximum estimates not discounted for short pieces.

- In using the per hectare volume estimates contained in this report, it is important to have an accurate measure of stand area to estimate overall volumes. This may mean verifying air photo scale and stand boundaries before determining stand areas.

- Factors to convert final volume estimates from m^3/ha to other units are given in Appendix 4.

Examples

1. Example 1 is a softwood stand of mixed species, with no species dominant in any class. No diameter measurements were taken. The stand will be harvested using a tree-length system.

Stand	Plot #	Merch. Trees/Plot	Sawlog Trees/Plot	Merch. Lorey's Ht. (m)	Sawlog Lorey's Ht. (m)	Merch. QDBH (cm)	Sawlog QDBH (cm)
1	1	16	0	12.5			
	2	12	6	11.0	16.0		
	3	15	2	11.4	16.6		
	4	17	5	10.6	17.2		
	Mean	**15.00**	**3.25**	**11.4**	**16.6**	**nd**	**nd**
BAF = 2	**BA (m^2/ha)**	**30.00**	**6.50**				

(1A) Determine Merchantable Volume:

From Table 1, look up volume for MBA = 30 m^2/ha and Lorey's Ht. = 11 m.
Volume = 136 m^3/ha

Adjust estimate for expected cull and waste (for example: 5%).
Volume = (136 m^3/ha) x (0.95) = 129 m^3/ha

(1B) Determine Sawlog Volume:

From Table 3, look up volume for SBA = 6 m^2/ha and Lorey's Ht. = 17 m.
Volume = 42 m^3/ha

Adjust estimate for expected cull and waste (for example: 5%).
Volume = (42 m^3/ha) x (0.95) = 40 m^3/ha

2. Example 2 is the same as Example 1 except: (i) the merchantable size class is dominated by balsam fir and will be harvested using a shortwood system; and (ii) the sawlog size class is dominated by red spruce.

Stand	Plot #	Merch. Trees/Plot	Sawlog Trees/Plot	Merch. Lorey's Ht. (m)	Sawlog Lorey's Ht. (m)	Merch. QDBH (cm)	Sawlog QDBH (cm)
1	1	16	0	12.5			
	2	12	6	11.0	16.0		
	3	15	2	11.4	16.6		
	4	17	5	10.6	17.2		
	Mean	**15.00**	**3.25**	**11.4**	**16.6**	**nd**	**nd**
BAF = 2	**BA (m^2/ha)**	**30.00**	**6.50**				

(2A) Determine Shortwood Merchantable Volume:

From Table 1, look up volume for MBA = 30 m^2/ha and Lorey's Ht. = 11 m.
Volume = 136 m^3/ha

From Table 6, look up correction factor for shortwood balsam fir at Lorey's Ht. = 11 m.
Correction Factor = 0.94

Apply correction factor to estimate Merchantable Balsam Fir Shortwood Volume.
(136 m^3/ha) x (0.94) = 128 m^3/ha

Adjust estimate for expected cull and waste (for example: 10%).
Volume = (128 m^3/ha) x (0.90) = 115 m^3/ha

(2B) Determine Sawlog Volume:

From Table 3, look up volume for SBA = 6 m^2/ha and Lorey's Ht. = 17 m.
Volume = 42 m^3/ha

From Table 7, look up correction factor for sawlog red spruce at Lorey's Ht. = 17 m.
Correction Factor = 1.06

Apply correction factor to estimate Red Spruce Sawlog Volume.
(42 m^3/ha) x (1.06) = 45 m^3/ha

Adjust estimate for expected cull and waste (for example: 5%).
Volume = (45 m^3/ha) x (0.95) = 43 m^3/ha

3. Example 3 is the same as Example 2 except diameter measurements were taken for more accuracy.

Stand	Plot #	Merch. Trees/Plot	Sawlog Trees/Plot	Merch. Lorey's Ht. (m)	Sawlog Lorey's Ht. (m)	Merch. QDBH (cm)	Sawlog QDBH (cm)
1	1	16	0	12.5			
	2	12	6	11.0	16.0		
	3	15	2	11.4	16.6		
	4	17	5	10.6	17.2		
	Mean	**15.00**	**3.25**	**11.4**	**16.6**	**11.8**	**22.6**
BAF = 2	**BA (m^2/ha)**	**30.00**	**6.50**				

(3A) Determine Shortwood Merchantable Volume:

From Table 1, look up volume for MBA = 30 m^2/ha and Lorey's Ht. = 11 m.
Volume = 136 m^3/ha

From Table A5-5 (Appendix 5), look up correction factor for shortwood balsam fir at Lorey's Ht. = 11 m and QDBH = 12 cm.
Correction Factor = 0.77

Apply correction factor to estimate Merchantable Balsam Fir Shortwood Volume.
(136 m^3/ha) x (0.77) = 105 m^3/ha

Adjust estimate for expected cull and waste (for example: 10%).
Volume = (105 m^3/ha) x (0.90) = 94 m^3/ha

(3B) Determine Sawlog Volume:

From Table 3, look up volume for SBA = 6 m^2/ha and Lorey's Ht. = 17 m.
Volume = 42 m^3/ha

From Table A5-3 (Appendix 5), look up correction factor for sawlog red spruce at Lorey's Ht. = 17 m and QDBH = 23 cm.
Correction Factor = 1.04

Apply correction factor to estimate Red Spruce Sawlog Volume.
(42 m^3/ha) x (1.04) = 44 m^3/ha

Adjust estimate for expected cull and waste (for example: 5%).
Volume = (44 m^3/ha) x (0.95) = 42 m^3/ha

4. Example 4 is a tolerant hardwood stand of mixed species, with no species dominant in any class. Diameter measurements were taken for more accuracy. An estimate of merchantable top-wood from the sawlog class is also required. The stand will be harvested using a tree-length system.

Stand	Plot #	Merch. Trees/Plot	Sawlog Trees/Plot	Merch. Lorey's Ht. (m)	Sawlog Lorey's Ht. (m)	Merch. QDBH (cm)	Sawlog QDBH (cm)
1	1	14	4	14.0	18.0		
	2	12	6	14.6	19.6		
	3	16	2	13.7	18.5		
	4	12	5	13.2	21.0		
	Mean	**13.50**	**4.25**	**13.9**	**19.3**	**14.2**	**25.6**
BAF = 2	**BA (m^2/ha)**	**27.00**	**8.50**				

(4A) Determine Merchantable Volume:

From Table 8, look up volume for MBA = 27 m^2/ha and Lorey's Ht. = 14 m.
Volume = 138 m^3/ha

From Table 9, look up diameter correction factor for hardwood at Lorey's Ht. = 14 m and QDBH = 14 cm.
Correction Factor = 0.93

Apply correction factor to estimate Hardwood Merchantable Volume.
(138 m^3/ha) x (0.93) = 128 m^3/ha

Adjust estimate for expected cull and waste (for example: 5%).
Volume = (128 m^3/ha) x (0.95) = 122 m^3/ha

(4B) Determine Sawlog Volume:

From Table 10, look up volume for SBA = 8 m^2/ha and Lorey's Ht. = 19 m.
Volume = 43 m^3/ha

From Table 11, look up diameter correction factor for hardwood sawlog at Lorey's Ht. = 19 m and QDBH = 26 cm.
Correction Factor = 0.76

Apply correction factor to estimate Hardwood Sawlog Volume.
(43 m^3/ha) x (0.76) = 33 m^3/ha

Adjust estimate for expected cull and waste (for example: 10%).
Volume = (33 m^3/ha) x (0.90) = 30 m^3/ha

(4C) Determine Merchantable Top-wood Volume:

From Table 8, look up volume for MBA = 8 m^2/ha and Lorey's Ht. = 19 m.
Volume = 55 m^3/ha

From Table 9, look up diameter correction factor for hardwood at Lorey's Ht. = 19 m and QDBH = 26 cm.
Correction Factor = 1.00

Apply correction factor to estimate Hardwood Merchantable Volume.
(55 m^3/ha) x (1.00) = 55 m^3/ha

Subtract diameter corrected Sawlog Volume from diameter corrected Merchantable Volume.
(55 m^3/ha) - (33 m3/ha) = 22 m^3/ha

Correct estimate for cull and waste (for example: 10%).
Volume = (22 m^3/ha) x (0.90) = 20 m^3/ha

Examples 1 to 3 show that by accounting for species, harvesting system, and diameter; estimated merchantable volume decreased from 129 m^3/ha to 94 m^3/ha. This decrease was due to: (i) the change in harvesting system from tree-length to shortwood; (ii) the smaller than average diameter of the balsam fir; and (iii) an anticipated increase in cull and waste due to rot in the balsam fir. In contrast, sawlog volumes remained essentially the same after applying species and diameter class correction factors. This was due to: (i) the sawlogs being of average diameter for the given height; and (ii) the estimated cull being offset by the volume increase due to species.

Example 4 shows the importance of diameter correction when estimating hardwood volume, especially sawlog volume. Also, by having diameter data available, it was possible to estimate merchantable top-wood volume.

Table 1. Softwood Merchantable Volume Table (m^3/ha). *

MBA	Total Lorey's Height of Merchantable Trees in Metres														
(m2/ha)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	6	7	8	9	10	11	12	13	14	14	15	16	17	18	18
3	9	11	12	14	15	16	18	19	20	22	23	24	25	26	28
4	12	14	16	18	20	22	24	25	27	29	30	32	34	35	37
5	15	18	20	23	25	27	29	32	34	36	38	40	42	44	46
6	18	21	24	27	30	33	35	38	41	43	46	48	51	53	55
7	22	25	28	32	35	38	41	44	47	50	53	56	59	62	64
8	25	28	32	36	40	44	47	51	54	58	61	64	67	71	74
9	28	32	36	41	45	49	53	57	61	65	68	72	76	79	83
10	31	36	40	45	50	54	59	63	68	72	76	80	84	88	92
11	34	39	44	50	55	60	65	70	74	79	84	88	93	97	101
12	37	43	49	54	60	65	71	76	81	86	91	96	101	106	111
13	40	46	53	59	65	71	77	82	88	93	99	104	110	115	120
14	43	50	57	63	70	76	83	89	95	101	107	112	118	123	129
15	46	53	61	68	75	82	88	95	102	108	114	120	126	132	138
16	49	57	65	72	80	87	94	101	108	115	122	128	135	141	147
17	52	61	69	77	85	93	100	108	115	122	129	136	143	150	157
18	55	64	73	81	90	98	106	114	122	129	137	144	152	159	166
19	58	68	77	86	95	103	112	120	129	137	145	152	160	168	175
20	61	71	81	90	100	109	118	127	135	144	152	160	168	176	184
21	65	75	85	95	105	114	124	133	142	151	160	168	177	185	193
22	68	78	89	99	110	120	130	139	149	158	167	176	185	194	203
23	71	82	93	104	115	125	136	146	156	165	175	184	194	203	212
24	74	85	97	108	120	131	141	152	162	173	183	192	202	212	221
25	77	89	101	113	125	136	147	158	169	180	190	200	211	221	230
26	80	93	105	118	130	142	153	165	176	187	198	209	219	229	240
27	83	96	109	122	135	147	159	171	183	194	205	217	227	238	249
28	86	100	113	127	140	152	165	177	189	201	213	225	236	247	258
29	89	103	117	131	145	158	171	184	196	209	221	233	244	256	267
30	92	107	121	136	150	163	177	190	203	216	228	241	253	265	276
31	95	110	125	140	155	169	183	196	210	223	236	249	261	273	286
32	98	114	129	145	160	174	189	203	217	230	243	257	270	282	295
33	101	118	133	149	165	180	194	209	223	237	251	265	278	291	304
34	105	121	138	154	170	185	200	215	230	245	259	273	286	300	313
35	108	125	142	158	175	191	206	222	237	252	266	281	295	309	322
36	111	128	146	163	180	196	212	228	244	259	274	289	303	318	332
37	114	132	150	167	184	201	218	234	250	266	282	297	312	326	341
38	117	135	154	172	189	207	224	241	257	273	289	305	320	335	350
39	120	139	158	176	194	212	230	247	264	280	297	313	329	344	359
40	123	142	162	181	199	218	236	253	271	288	304	321	337	353	368
41	126	146	166	185	204	223	242	260	277	295	312	329	345	362	378
42	129	150	170	190	209	229	248	266	284	302	320	337	354	370	387
43	132	153	174	194	214	234	253	272	291	309	327	345	362	379	396
44	135	157	178	199	219	240	259	279	298	316	335	353	371	388	405
45	138	160	182	203	224	245	265	285	305	324	342	361	379	397	415
46	141	164	186	208	229	250	271	291	311	331	350	369	387	406	424
47	144	167	190	212	234	256	277	298	318	338	358	377	396	415	433
48	148	171	194	217	239	261	283	304	325	345	365	385	404	423	442
49	151	175	198	221	244	267	289	310	332	352	373	393	413	432	451
50	154	178	202	226	249	272	295	317	338	360	380	401	421	441	461
51	157	182	206	231	254	278	301	323	345	367	388	409	430	450	470
52	160	185	210	235	259	283	306	329	352	374	396	417	438	459	479
53	163	189	214	240	264	289	312	336	359	381	403	425	446	467	488
54	166	192	218	244	269	294	318	342	365	388	411	433	455	476	497
55	169	196	222	249	274	299	324	348	372	396	418	441	463	485	507
56	172	199	227	253	279	305	330	355	379	403	426	449	472	494	516
57	175	203	231	258	284	310	336	361	386	410	434	457	480	503	525
58	178	207	235	262	289	316	342	367	392	417	441	465	489	512	534
59	181	210	239	267	294	321	348	374	399	424	449	473	497	520	543
60	184	214	243	271	299	327	354	380	406	431	457	481	505	529	553

* Based on gross merchantable volume (solid wood, inside bark) of all trees 9.1 cm dbh and greater with 0.15 m stump and top dib 7.62 cm (tree length). See Tables 2, 5, and 6 for adjustments due to diameter class, species, or harvesting method. Appendix 5 contains species-specific correction factors for diameter class and harvesting method. Further reductions should be made for cull and waste after volume determination.

Table 2. Factors for Calculating Softwood Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.70	0.67	0.66	0.64	0.63	0.63	0.62	0.61	0.61	0.61	0.60	0.60	0.60	0.60	0.60
11	0.83	0.80	0.78	0.77	0.75	0.74	0.74	0.73	0.72	0.72	0.72	0.71	0.71	0.71	0.71
12	0.92	0.89	0.86	0.85	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.79	0.79	0.78	0.78
13	0.98	0.95	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.84	0.84	0.84	0.84	0.83
14	1.02	0.99	0.96	0.94	0.93	0.91	0.90	0.90	0.89	0.88	0.88	0.88	0.87	0.87	0.87
15	1.06	1.02	0.99	0.97	0.95	0.94	0.93	0.92	0.92	0.91	0.91	0.90	0.90	0.90	0.90
16	1.08	1.04	1.01	0.99	0.98	0.96	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.92	0.92
17	1.10	1.06	1.03	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.94	0.93	0.93
18	1.11	1.07	1.04	1.02	1.01	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.95	0.94
19	1.12	1.08	1.06	1.03	1.02	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.95
20	1.13	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.96	0.96
21	1.14	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.98	0.98	0.97	0.97	0.97
22	1.15	1.11	1.08	1.05	1.04	1.02	1.01	1.00	1.00	0.99	0.98	0.98	0.98	0.97	0.97
23	1.15	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.99	0.98	0.98	0.98
24	1.16	1.12	1.09	1.06	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.98	0.98
25	1.16	1.12	1.09	1.07	1.05	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99	0.98
26	1.16	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.00	1.00	1.00	0.99	0.99	0.99
27	1.17	1.13	1.10	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99
28	1.17	1.13	1.10	1.07	1.06	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99
29	1.17	1.13	1.10	1.08	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	0.99
30	1.17	1.13	1.10	1.08	1.06	1.05	1.03	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99
31	1.18	1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	1.00
32	1.18	1.14	1.11	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
33	1.18	1.14	1.11	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
34	1.18	1.14	1.11	1.08	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
35	1.18	1.14	1.11	1.08	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
36	1.18	1.14	1.11	1.09	1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00
37		1.14	1.11	1.09	1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00
38			1.11	1.09	1.07	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00
39				1.09	1.07	1.06	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00
40					1.07	1.06	1.04	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00
41						1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00
42							1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01
43								1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01
44									1.03	1.02	1.02	1.01	1.01	1.01	1.01
45										1.02	1.02	1.02	1.01	1.01	1.01
46											1.02	1.02	1.01	1.01	1.01
47												1.02	1.01	1.01	1.01
48													1.01	1.01	1.01
49														1.01	1.01
50															1.01

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

Shaded area represents 95% confidence interval for predicted diameters in each height class (see Appendix 3).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table 3. Softwood Sawlog Volume Table (m^3/ha). *

SBA	Total Lorey's Height of Sawlog Trees in Metres												
(m2/ha)	12	13	14	15	16	17	18	19	20	21	22	23	24
2	10	11	11	12	13	14	15	16	17	17	18	19	20
3	14	16	17	18	20	21	22	24	25	26	27	28	30
4	19	21	23	25	26	28	30	31	33	35	36	38	39
5	24	26	29	31	33	35	37	39	41	43	45	47	49
6	29	32	34	37	40	42	45	47	50	52	55	57	59
7	34	37	40	43	46	49	52	55	58	61	64	66	69
8	38	42	46	49	53	56	60	63	66	70	73	76	79
9	43	47	51	55	59	63	67	71	75	78	82	85	89
10	48	53	57	62	66	70	75	79	83	87	91	95	99
11	53	58	63	68	73	77	82	87	91	96	100	104	109
12	58	63	69	74	79	84	89	94	99	104	109	114	118
13	62	68	74	80	86	91	97	102	108	113	118	123	128
14	67	74	80	86	92	98	104	110	116	122	127	133	138
15	72	79	86	92	99	105	112	118	124	130	136	142	148
16	77	84	91	99	106	112	119	126	133	139	145	152	158
17	82	89	97	105	112	119	127	134	141	148	154	161	168
18	86	95	103	111	119	127	134	142	149	156	164	171	178
19	91	100	108	117	125	134	142	150	157	165	173	180	187
20	96	105	114	123	132	141	149	157	166	174	182	190	197
21	101	110	120	129	139	148	157	165	174	182	191	199	207
22	106	116	126	135	145	155	164	173	182	191	200	209	217
23	110	121	131	142	152	162	171	181	191	200	209	218	227
24	115	126	137	148	158	169	179	189	199	209	218	228	237
25	120	131	143	154	165	176	186	197	207	217	227	237	247
26	125	137	148	160	171	183	194	205	215	226	236	246	257
27	130	142	154	166	178	190	201	213	224	235	245	256	266
28	134	147	160	172	185	197	209	220	232	243	254	265	276
29	139	152	166	179	191	204	216	228	240	252	264	275	286
30	144	158	171	185	198	211	224	236	249	261	273	284	296
31	149	163	177	191	204	218	231	244	257	269	282	294	306
32	154	168	183	197	211	225	239	252	265	278	291	303	316
33	158	173	188	203	218	232	246	260	273	287	300	313	326
34	163	179	194	209	224	239	253	268	282	295	309	322	336
35	168	184	200	215	231	246	261	276	290	304	318	332	345
36	173	189	206	222	237	253	268	283	298	313	327	341	355
37	177	195	211	228	244	260	276	291	306	321	336	351	365
38	182	200	217	234	251	267	283	299	315	330	345	360	375
39	187	205	223	240	257	274	291	307	323	339	354	370	385
40	192	210	228	246	264	281	298	315	331	348	364	379	395
41	197	216	234	252	270	288	306	323	340	356	373	389	405
42	201	221	240	259	277	295	313	331	348	365	382	398	414
43	206	226	246	265	284	302	320	338	356	374	391	408	424
44	211	231	251	271	290	309	328	346	364	382	400	417	434
45	216	237	257	277	297	316	335	354	373	391	409	427	444
46	221	242	263	283	303	323	343	362	381	400	418	436	454
47	225	247	268	289	310	330	350	370	389	408	427	446	464
48	230	252	274	296	317	337	358	378	398	417	436	455	474
49	235	258	280	302	323	344	365	386	406	426	445	465	484
50	240	263	286	308	330	351	373	394	414	434	454	474	493
51	245	268	291	314	336	358	380	401	422	443	463	484	503
52	249	273	297	320	343	365	388	409	431	452	473	493	513
53	254	279	303	326	350	372	395	417	439	461	482	502	523
54	259	284	308	332	356	380	402	425	447	469	491	512	533
55	264	289	314	339	363	387	410	433	456	478	500	521	543
56	269	294	320	345	369	394	417	441	464	487	509	531	553
57	273	300	325	351	376	401	425	449	472	495	518	540	562
58	278	305	331	357	383	408	432	457	480	504	527	550	572
59	283	310	337	363	389	415	440	464	489	513	536	559	582
60	288	315	343	369	396	422	447	472	497	521	545	569	592

* Based on gross sawlog volume (solid wood, inside bark) of all trees 14.1 cm dbh and greater with 0.15 m stump and top dib 10.16 cm (tree length). See Tables 4 and 7 for adjustments due to diameter class or species. Appendix 5 contains species-specific correction factors for diameter class. Further reductions should be made for cull and waste after volume determination.

Table 4. Factors for Calculating Softwood Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
16	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.80	0.79	0.79	0.79
17	0.91	0.89	0.88	0.87	0.86	0.86	0.85	0.84	0.84	0.84	0.83	0.83	0.83
18	0.94	0.93	0.91	0.90	0.90	0.89	0.88	0.88	0.87	0.87	0.86	0.86	0.86
19	0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.90	0.89	0.89	0.89	0.88
20	0.99	0.98	0.96	0.95	0.94	0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90
21	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.92
22	1.02	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.94	0.94	0.94	0.93	0.93
23	1.04	1.02	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.94	0.94
24	1.05	1.03	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96	0.96	0.95	0.95
25	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96
26	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.96
27	1.07	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.98	0.98	0.98	0.97	0.97
28	1.07	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.97
29	1.08	1.06	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98	0.98
30	1.08	1.06	1.05	1.03	1.02	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98
31	1.08	1.07	1.05	1.04	1.03	1.02	1.01	1.00	1.00	1.00	0.99	0.99	0.99
32	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99
33	1.09	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	0.99	0.99
34	1.09	1.07	1.06	1.05	1.03	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99
35	1.09	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99
36	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
37	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
38	1.10	1.08	1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00
39	1.10	1.08	1.07	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.00	1.00
40	1.10	1.08	1.07	1.06	1.04	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00
41	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00
42	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00
43	1.11	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
44		1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
45			1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
46				1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
47					1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
48						1.04	1.04	1.03	1.02	1.02	1.02	1.01	1.01
49							1.04	1.03	1.02	1.02	1.02	1.01	1.01
50								1.03	1.02	1.02	1.02	1.01	1.01
51									1.03	1.02	1.02	1.01	1.01
52										1.02	1.02	1.01	1.01
53											1.02	1.01	1.01
54												1.01	1.01
55													1.01

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 10.16 cm (tree length).

Shaded area represents 95% confidence interval for predicted diameters in each height class (see Appendix 3).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Softwood Sawlog Volume (m^3/ha) in Table 3.

Table 5. Factors for Calculating Softwood Species Merchantable Volume (m^3/ha) [1]

Species *	Total Lorey's Height of Merchantable Trees in Metres														
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
R.Spruce	1.14	1.13	1.12	1.10	1.09	1.08	1.08	1.07	1.06	1.05	1.05	1.04	1.03	1.03	1.02
B.Fir	1.09	1.07	1.05	1.03	1.01	1.00	0.98	0.97	0.95	0.94	0.93	0.91	0.90	0.89	0.88
W.Spruce	0.99	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.92
B.Spruce	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.93	0.92	0.92	0.91
R.Pine	1.05	1.05	1.05	1.05	1.04	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.02	1.02
W.Pine	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hem.	1.02	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98	0.98	0.97	0.97	0.96	0.96	0.96

(1) Based on gross merchantable volume (solid wood, inside bark) of all trees 9.1 cm dbh and greater with 0.15 m stump and top dib 7.62 cm (tree length). To obtain Species Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table 6. Factors for Calculating Softwood Species Shortwood Volume (m^3/ha) [2]

Species *	Total Lorey's Height of Merchantable Trees in Metres														
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
R.Spruce	0.98	1.00	1.02	1.03	1.03	1.04	1.04	1.03	1.03	1.03	1.03	1.02	1.02	1.01	1.01
B.Fir	0.91	0.93	0.94	0.94	0.94	0.93	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86
W.Spruce	0.81	0.84	0.87	0.88	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90
B.Spruce	0.87	0.90	0.91	0.92	0.93	0.93	0.93	0.93	0.92	0.92	0.91	0.91	0.90	0.90	0.89
R.Pine	0.89	0.93	0.95	0.97	0.98	0.99	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01
W.Pine	0.82	0.86	0.89	0.91	0.93	0.94	0.95	0.96	0.96	0.97	0.97	0.98	0.98	0.98	0.98
Hem.	0.85	0.88	0.91	0.92	0.93	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94
S.Wood	0.82	0.86	0.89	0.91	0.93	0.94	0.95	0.96	0.96	0.97	0.97	0.98	0.98	0.98	0.98

(2) Based on gross merchantable volume (solid wood, inside bark) of all trees 9.1 cm dbh and greater with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height. To obtain Species Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table 7. Factors for Calculating Softwood Species Sawlog Volume (m^3/ha) [3]

Species *	Total Lorey's Height of Sawlog Trees in Metres												
	12	13	14	15	16	17	18	19	20	21	22	23	24
R.Spruce	1.10	1.09	1.08	1.08	1.07	1.06	1.05	1.05	1.04	1.03	1.03	1.02	1.02
B.Fir	1.02	1.01	0.99	0.98	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87
W.Spruce	0.97	0.96	0.96	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.92	0.91	0.91
B.Spruce	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.92	0.92	0.91	0.90
R.Pine	1.05	1.05	1.05	1.04	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03
W.Pine	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hem.	1.00	1.00	0.99	0.99	0.98	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.95

(3) Based on gross sawlog volume (solid wood, inside bark) of all trees 14.1 cm dbh and greater with 0.15 m stump and top dib 10.16 cm (tree length). To obtain Species Sawlog Volume (m^3/ha), multiply factor by corresponding Softwood Sawlog Volume (m^3/ha) in Table 3.

* Species: R.Spruce = Red Spruce, B.Fir = Balsam Fir, W.Spruce = White Spruce, B.Spruce = Black Spruce, R.Pine = Red Pine, W.Pine = White Pine, Hem. = Hemlock, S.Wood = generic softwood.

Table 8. Hardwood Merchantable Volume Table (m^3/ha). *

MBA	Total Lorey's Height of Merchantable Trees in Metres														
(m2/ha)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	5	6	7	8	9	9	10	11	12	12	13	14	14	15	16
3	8	9	11	12	13	14	15	16	17	19	20	21	21	22	23
4	11	13	14	16	17	19	20	22	23	25	26	27	29	30	31
5	14	16	18	20	22	24	26	27	29	31	33	34	36	37	39
6	16	19	21	24	26	28	31	33	35	37	39	41	43	45	47
7	19	22	25	28	30	33	36	38	41	43	46	48	50	52	55
8	22	25	28	32	35	38	41	44	47	49	52	55	57	60	62
9	24	28	32	36	39	43	46	49	52	56	59	62	64	67	70
10	27	31	35	40	43	47	51	55	58	62	65	68	72	75	78
11	30	34	39	43	48	52	56	60	64	68	72	75	79	82	86
12	32	38	43	47	52	57	61	66	70	74	78	82	86	90	93
13	35	41	46	51	57	62	66	71	76	80	85	89	93	97	101
14	38	44	50	55	61	66	71	77	82	86	91	96	100	105	109
15	41	47	53	59	65	71	77	82	87	93	98	103	107	112	117
16	43	50	57	63	70	76	82	88	93	99	104	109	115	120	125
17	46	53	60	67	74	80	87	93	99	105	111	116	122	127	132
18	49	56	64	71	78	85	92	98	105	111	117	123	129	135	140
19	51	59	67	75	83	90	97	104	111	117	124	130	136	142	148
20	54	63	71	79	87	95	102	109	116	123	130	137	143	150	156
21	57	66	74	83	91	99	107	115	122	130	137	144	150	157	164
22	59	69	78	87	96	104	112	120	128	136	143	150	158	165	171
23	62	72	82	91	100	109	117	126	134	142	150	157	165	172	179
24	65	75	85	95	104	114	123	131	140	148	156	164	172	179	187
25	68	78	89	99	109	118	128	137	146	154	163	171	179	187	195
26	70	81	92	103	113	123	133	142	151	160	169	178	186	194	202
27	73	84	96	107	117	128	138	148	157	167	176	185	193	202	210
28	76	88	99	111	122	132	143	153	163	173	182	191	201	209	218
29	78	91	103	115	126	137	148	159	169	179	189	198	208	217	226
30	81	94	106	119	130	142	153	164	175	185	195	205	215	224	234
31	84	97	110	122	135	147	158	170	181	191	202	212	222	232	241
32	86	100	113	126	139	151	163	175	186	197	208	219	229	239	249
33	89	103	117	130	143	156	168	180	192	204	215	226	236	247	257
34	92	106	121	134	148	161	174	186	198	210	221	233	243	254	265
35	95	109	124	138	152	166	179	191	204	216	228	239	251	262	273
36	97	113	128	142	156	170	184	197	210	222	234	246	258	269	280
37	100	116	131	146	161	175	189	202	215	228	241	253	265	277	288
38	103	119	135	150	165	180	194	208	221	234	247	260	272	284	296
39	105	122	138	154	170	185	199	213	227	241	254	267	279	292	304
40	108	125	142	158	174	189	204	219	233	247	260	274	286	299	312
41	111	128	145	162	178	194	209	224	239	253	267	280	294	307	319
42	113	131	149	166	183	199	214	230	245	259	273	287	301	314	327
43	116	135	152	170	187	203	220	235	250	265	280	294	308	322	335
44	119	138	156	174	191	208	225	241	256	271	286	301	315	329	343
45	122	141	160	178	196	213	230	246	262	278	293	308	322	337	350
46	124	144	163	182	200	218	235	252	268	284	299	315	329	344	358
47	127	147	167	186	204	222	240	257	274	290	306	321	337	351	366
48	130	150	170	190	209	227	245	263	280	296	312	328	344	359	374
49	132	153	174	194	213	232	250	268	285	302	319	335	351	366	382
50	135	156	177	198	217	237	255	273	291	309	325	342	358	374	389
51	138	160	181	202	222	241	260	279	297	315	332	349	365	381	397
52	140	163	184	205	226	246	265	284	303	321	338	356	372	389	405
53	143	166	188	209	230	251	271	290	309	327	345	362	380	396	413
54	146	169	191	213	235	255	276	295	315	333	351	369	387	404	421
55	149	172	195	217	239	260	281	301	320	339	358	376	394	411	428
56	151	175	199	221	243	265	286	306	326	346	364	383	401	419	436
57	154	178	202	225	248	270	291	312	332	352	371	390	408	426	444
58	157	181	206	229	252	274	296	317	338	358	377	397	415	434	452
59	159	185	209	233	256	279	301	323	344	364	384	403	423	441	460
60	162	188	213	237	261	284	306	328	349	370	390	410	430	449	467

* Based on gross merchantable volume (solid wood, inside bark) of all trees 9.1 cm dbh and greater with 0.15 m stump and top dib 7.62 cm (tree length). See Tables 9, 12, and 13 for adjustments due to diameter class, species, or harvesting method. Appendix 5 contains species-specific correction factors for diameter class and harvesting method. Further reductions should be made for cull and waste after volume determination.

Table 9. Factors for Calculating Hardwood Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.73	0.71	0.69	0.68	0.67	0.66	0.65	0.65	0.64	0.64	0.64	0.64	0.64	0.64	0.63
11	0.87	0.84	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.76	0.75	0.75	0.75	0.75	0.75
12	0.95	0.92	0.89	0.88	0.86	0.85	0.84	0.84	0.83	0.83	0.83	0.82	0.82	0.82	0.82
13	1.01	0.97	0.95	0.93	0.91	0.90	0.89	0.89	0.88	0.88	0.87	0.87	0.87	0.87	0.87
14	1.05	1.01	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.90
15	1.08	1.04	1.01	0.99	0.97	0.96	0.95	0.94	0.94	0.93	0.93	0.93	0.93	0.92	0.92
16	1.10	1.06	1.03	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94	0.94
17	1.11	1.07	1.04	1.02	1.01	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.95	0.95
18	1.13	1.08	1.06	1.03	1.02	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.96	0.96
19	1.13	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.97	0.97	0.97
20	1.14	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.98	0.98
21	1.15	1.11	1.08	1.05	1.04	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.98	0.98	0.98
22	1.15	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.99	0.98
23	1.16	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99	0.99
24	1.16	1.12	1.09	1.06	1.05	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99	0.99
25	1.16	1.12	1.09	1.07	1.05	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99
26	1.16	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	1.00	0.99
27	1.17	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	1.00	1.00
28	1.17	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.01	1.00	1.00	1.00	1.00
29	1.17	1.13	1.09	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	1.00
30	1.17	1.13	1.10	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	1.00
31	1.17	1.13	1.10	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00	1.00
32	1.17	1.13	1.10	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00	1.00
33	1.17	1.13	1.10	1.07	1.06	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00	1.00
34	1.17	1.13	1.10	1.08	1.06	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.01	1.00	1.00
35	1.17	1.13	1.10	1.08	1.06	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
36	1.17	1.13	1.10	1.08	1.06	1.05	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
37		1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
38			1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
39				1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
40					1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
41						1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
42							1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
43								1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
44									1.02	1.02	1.01	1.01	1.01	1.01	1.00
45										1.02	1.01	1.01	1.01	1.01	1.00
46											1.01	1.01	1.01	1.01	1.01
47												1.01	1.01	1.01	1.01
48													1.01	1.01	1.01
49														1.01	1.01
50															1.01

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

Shaded area represents 95% confidence interval for predicted diameters in each height class (see Appendix 3).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table 10. Hardwood Sawlog Volume Table (m^3/ha). *

SBA	Total Lorey's Height of Sawlog Trees in Metres												
(m2/ha)	12	13	14	15	16	17	18	19	20	21	22	23	24
2	5	6	7	8	9	9	10	11	12	12	13	14	15
3	8	9	10	12	13	14	15	16	17	19	20	21	22
4	11	12	14	15	17	19	20	22	23	25	26	28	29
5	13	15	17	19	21	23	25	27	29	31	33	35	36
6	16	18	21	23	26	28	30	33	35	37	39	42	44
7	19	21	24	27	30	33	35	38	41	43	46	48	51
8	21	25	28	31	34	37	40	43	46	50	52	55	58
9	24	28	31	35	38	42	45	49	52	56	59	62	66
10	27	31	35	39	43	47	50	54	58	62	66	69	73
11	29	34	38	42	47	51	55	60	64	68	72	76	80
12	32	37	42	46	51	56	60	65	70	74	79	83	87
13	35	40	45	50	55	60	66	71	76	80	85	90	95
14	37	43	48	54	60	65	71	76	81	87	92	97	102
15	40	46	52	58	64	70	76	81	87	93	98	104	109
16	43	49	55	62	68	74	81	87	93	99	105	111	117
17	45	52	59	66	72	79	86	92	99	105	112	118	124
18	48	55	62	69	77	84	91	98	105	111	118	125	131
19	51	58	66	73	81	88	96	103	110	118	125	132	138
20	53	61	69	77	85	93	101	109	116	124	131	139	146
21	56	64	73	81	89	98	106	114	122	130	138	145	153
22	59	67	76	85	94	102	111	119	128	136	144	152	160
23	61	70	80	89	98	107	116	125	134	142	151	159	168
24	64	74	83	93	102	112	121	130	139	149	157	166	175
25	67	77	87	96	106	116	126	136	145	155	164	173	182
26	69	80	90	100	111	121	131	141	151	161	171	180	189
27	72	83	93	104	115	126	136	147	157	167	177	187	197
28	75	86	97	108	119	130	141	152	163	173	184	194	204
29	77	89	100	112	123	135	146	157	169	179	190	201	211
30	80	92	104	116	128	140	151	163	174	186	197	208	219
31	83	95	107	120	132	144	156	168	180	192	203	215	226
32	86	98	111	123	136	149	161	174	186	198	210	222	233
33	88	101	114	127	140	153	166	179	192	204	216	229	240
34	91	104	118	131	145	158	171	185	198	210	223	235	248
35	94	107	121	135	149	163	176	190	203	217	230	242	255
36	96	110	125	139	153	167	181	195	209	223	236	249	262
37	99	113	128	143	157	172	187	201	215	229	243	256	269
38	102	116	132	147	162	177	192	206	221	235	249	263	277
39	104	120	135	150	166	181	197	212	227	241	256	270	284
40	107	123	138	154	170	186	202	217	232	248	262	277	291
41	110	126	142	158	174	191	207	223	238	254	269	284	299
42	112	129	145	162	179	195	212	228	244	260	276	291	306
43	115	132	149	166	183	200	217	233	250	266	282	298	313
44	118	135	152	170	187	205	222	239	256	272	289	305	320
45	120	138	156	174	191	209	227	244	262	278	295	312	328
46	123	141	159	177	196	214	232	250	267	285	302	319	335
47	126	144	163	181	200	219	237	255	273	291	308	325	342
48	128	147	166	185	204	223	242	261	279	297	315	332	350
49	131	150	170	189	209	228	247	266	285	303	321	339	357
50	134	153	173	193	213	233	252	271	291	309	328	346	364
51	136	156	177	197	217	237	257	277	296	316	335	353	371
52	139	159	180	201	221	242	262	282	302	322	341	360	379
53	142	162	183	205	226	246	267	288	308	328	348	367	386
54	144	166	187	208	230	251	272	293	314	334	354	374	393
55	147	169	190	212	234	256	277	299	320	340	361	381	401
56	150	172	194	216	238	260	282	304	325	347	367	388	408
57	152	175	197	220	243	265	287	309	331	353	374	395	415
58	155	178	201	224	247	270	292	315	337	359	380	402	422
59	158	181	204	228	251	274	297	320	343	365	387	409	430
60	160	184	208	232	255	279	302	326	349	371	394	416	437

* Based on gross sawlog volume (solid wood, inside bark) of all trees 21.1 cm dbh and greater with 0.15 m stump and top dib 20.32 cm (tree length). See Tables 11 and 14 for adjustments due to diameter class or species. Appendix 5 contains species-specific correction factors for diameter class. Further reductions should be made for cull and waste after volume determination.

Table 11. Factors for Calculating Hardwood Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
22	0.39	0.37	0.35	0.33	0.32	0.31	0.30	0.29	0.29	0.28	0.28	0.27	0.27
23	0.60	0.56	0.53	0.51	0.49	0.47	0.46	0.45	0.44	0.43	0.42	0.41	0.41
24	0.77	0.72	0.68	0.65	0.63	0.61	0.59	0.57	0.56	0.55	0.54	0.53	0.52
25	0.91	0.85	0.80	0.77	0.74	0.71	0.69	0.67	0.66	0.64	0.63	0.62	0.61
26	1.02	0.96	0.91	0.86	0.83	0.80	0.78	0.76	0.74	0.72	0.71	0.70	0.69
27	1.11	1.04	0.99	0.94	0.91	0.87	0.85	0.82	0.81	0.79	0.77	0.76	0.75
28	1.19	1.12	1.06	1.01	0.97	0.94	0.91	0.88	0.86	0.84	0.83	0.81	0.80
29	1.26	1.18	1.12	1.06	1.02	0.99	0.96	0.93	0.91	0.89	0.87	0.86	0.85
30	1.31	1.23	1.17	1.11	1.07	1.03	1.00	0.97	0.95	0.93	0.91	0.90	0.88
31	1.36	1.28	1.21	1.15	1.11	1.07	1.03	1.01	0.98	0.96	0.94	0.93	0.91
32	1.40	1.31	1.24	1.19	1.14	1.10	1.07	1.04	1.01	0.99	0.97	0.95	0.94
33	1.44	1.35	1.27	1.22	1.17	1.13	1.09	1.06	1.04	1.01	1.00	0.98	0.96
34	1.47	1.38	1.30	1.24	1.19	1.15	1.11	1.08	1.06	1.04	1.02	1.00	0.98
35	1.49	1.40	1.32	1.26	1.21	1.17	1.13	1.10	1.08	1.05	1.03	1.02	1.00
36	1.52	1.42	1.34	1.28	1.23	1.19	1.15	1.12	1.09	1.07	1.05	1.03	1.02
37	1.54	1.44	1.36	1.30	1.25	1.20	1.17	1.13	1.11	1.08	1.06	1.05	1.03
38	1.55	1.46	1.38	1.31	1.26	1.22	1.18	1.15	1.12	1.10	1.08	1.06	1.04
39	1.57	1.47	1.39	1.33	1.27	1.23	1.19	1.16	1.13	1.11	1.09	1.07	1.05
40	1.58	1.48	1.40	1.34	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.08	1.06
41	1.60	1.50	1.42	1.35	1.30	1.25	1.21	1.18	1.15	1.13	1.10	1.09	1.07
42	1.61	1.51	1.42	1.36	1.30	1.26	1.22	1.19	1.16	1.13	1.11	1.09	1.08
43	1.62	1.51	1.43	1.37	1.31	1.27	1.23	1.19	1.16	1.14	1.12	1.10	1.08
44		1.52	1.44	1.37	1.32	1.27	1.23	1.20	1.17	1.15	1.12	1.10	1.09
45			1.45	1.38	1.33	1.28	1.24	1.21	1.18	1.15	1.13	1.11	1.09
46				1.39	1.33	1.28	1.24	1.21	1.18	1.16	1.13	1.12	1.10
47					1.34	1.29	1.25	1.22	1.19	1.16	1.14	1.12	1.10
48						1.29	1.25	1.22	1.19	1.16	1.14	1.12	1.11
49							1.26	1.22	1.19	1.17	1.15	1.13	1.11
50								1.23	1.20	1.17	1.15	1.13	1.11
51									1.20	1.17	1.15	1.13	1.12
52										1.18	1.16	1.14	1.12
53											1.16	1.14	1.12
54												1.14	1.12
55													1.13

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 20.32 cm (tree length).

Shaded area represents 95% confidence interval for predicted diameters in each height class (see Appendix 3).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Hardwood Sawlog Volume (m^3/ha) in Table 10.

Table 12. Factors for Calculating Hardwood Species Merchantable Volume (m^3/ha) [1]

Species *	Total Lorey's Height of Merchantable Trees in Metres														
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
S.Maple	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
R.Maple	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Y.Birch	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.98	0.98	0.98	0.98	0.98
W.Birch	1.08	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.02	1.02	1.01	1.00	1.00	0.99	0.98
R.Oak	1.09	1.09	1.08	1.08	1.07	1.07	1.06	1.06	1.06	1.05	1.05	1.04	1.04	1.03	1.03
T.Aspen	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11

(1) Based on gross merchantable volume (solid wood, inside bark) of all trees 9.1 cm dbh and greater with 0.15 m stump and top dib 7.62 cm (tree length). To obtain Species Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table 13. Factors for Calculating Hardwood Species Shortwood Volume (m^3/ha) [2]

Species *	Total Lorey's Height of Merchantable Trees in Metres														
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
S.Maple	0.78	0.83	0.86	0.89	0.90	0.92	0.93	0.94	0.94	0.95	0.95	0.96	0.96	0.96	0.96
R.Maple	0.78	0.83	0.86	0.89	0.90	0.92	0.93	0.94	0.94	0.95	0.95	0.96	0.96	0.96	0.96
Y.Birch	0.72	0.78	0.81	0.84	0.86	0.88	0.89	0.90	0.91	0.92	0.92	0.92	0.93	0.93	0.93
W.Birch	0.81	0.86	0.89	0.92	0.93	0.94	0.95	0.95	0.96	0.96	0.96	0.95	0.95	0.95	0.95
R.Oak	0.86	0.90	0.94	0.96	0.97	0.98	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99
T.Aspen	0.75	0.81	0.85	0.88	0.91	0.93	0.95	0.97	0.99	1.00	1.02	1.03	1.04	1.06	1.07
H.Wood	0.78	0.83	0.86	0.89	0.90	0.92	0.93	0.94	0.94	0.95	0.95	0.96	0.96	0.96	0.96

(2) Based on gross merchantable volume (solid wood, inside bark) of all trees 9.1 cm dbh and greater with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height. To obtain Species Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table 14. Factors for Calculating Hardwood Species Sawlog Volume (m^3/ha) [3]

Species *	Total Lorey's Height of Sawlog Trees in Metres												
	12	13	14	15	16	17	18	19	20	21	22	23	24
S.Maple	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
R.Maple	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Y.Birch	1.03	1.02	1.00	0.99	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.95
W.Birch	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.94	0.93
R.Oak	1.07	1.07	1.06	1.06	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.03	1.02
T.Aspen	1.00	1.01	1.02	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11	1.12	1.13

(3) Based on gross sawlog volume (solid wood, inside bark) of all trees 21.1 cm dbh and greater with 0.15 m stump and top dib 20.32 cm (tree length). To obtain Species Sawlog Volume (m^3/ha), multiply factor by corresponding Hardwood Sawlog Volume (m^3/ha) in Table 10.

* Species: S.Maple = Sugar Maple, R.Maple = Red Maple, Y.Birch = Yellow Birch, W.Birch = White Birch, R.Oak = Red Oak, T.Aspen = Trembling Aspen, H.Wood = generic hardwood.

DISCUSSION

Softwoods

For merchantable softwood, there is relatively little volume difference as a result of variation in diameter for a given height class (Table 2 shaded area). As a result, volume estimates based only on average height and stand basal area measurements (Table 1) should be representative in most cases. In stands 13 m or greater in height, volume estimates should generally be within 10% of estimates obtained using both height and diameter measurements. In stands less than 13 m in height, dbh variation becomes more important. Volumes can be overestimated by up to 30% in the shorter height classes if only average stand height is measured. Accurate volume estimates in stands less than 13 m requires dbh measurements, especially if average diameters are low.

Similar trends are evident for softwood sawlogs (Table 4 shaded area). Volume estimates based on average height and stand basal area measurements (Table 3) should be representative when the average height of sawlog size trees is 15 m or more. Confidence in volume estimates decreases when average height drops below 15 m. Again, this is most apparent at lower height and dbh classes, where volumes can be overestimated by 15% or more if diameter measurements are not taken.

Merchantable volume estimates in Table 1 assume tree-length harvesting of softwoods with average taper, a 15 cm stump, and a 7.62 cm (3 inch) top. Volume estimates can vary, however, according to species, harvesting system, or changes in stump height and top diameter limit.

Differences in estimated volume due to species tend to be low, generally less than 10% (Table 5). Only with red spruce are volumes consistently underestimated using Table 1, especially in shorter height classes. This is due to the less than average taper of red spruce. Shortwood harvesting (cutting 2.44 m sections from the merchantable length of the tree) has a greater impact on volume estimates than does species alone (assuming no short pieces are utilized). Differences are greatest in shorter height classes since the relative importance of lost top-wood is also greatest in these classes (Table 6). With respect to Table 1, shortwood harvesting of white spruce gives the lowest volumes (as much as 19% less), while red spruce is the least affected species.

Adjustments in sawlog volume due to species (Table 7) are less variable than for merchantable volume. Of note, however, is the 10% to 6% increase in red spruce volume (with respect to Table 3) in the 12 m to 17 m height classes.

Merchantable and sawlog volume estimates corrected for species and/or harvesting method could still be inaccurate if diameter versus height class assumptions in Tables 1 and 3 are not representative of the stand being measured. See Appendix 5 for correction factors incorporating species, harvesting method, and diameter class (for both softwoods and hardwoods).

Changes in volume due to changes in stump height or top diameter limit depend on the combination of values chosen. Intuitively, cutting to a lower stump height and/or to a smaller top diameter will result in more volume, with relative increases being most evident in the shorter height classes. Volume correction factors based on different combinations of stump height and top diameter limit are too numerous to list in this report. To estimate volumes using various stump heights and diameter limits, use the Product Cruise program (NSDNR 1996b).

Hardwoods

For merchantable hardwood, there is slightly more volume variation within height classes for different diameters than was the case for softwood (Table 9 shaded area). This reflects greater variability in hardwood diameter versus height relationships. As with softwoods however, the lower the average stand height, the more important diameter measurements become in accurately estimating volume. Merchantable volume based on average height (without dbh measurements) can be

overestimated by 30% or more in shorter height classes (Tables 8 and 9). Only in the 15 m height class and above would volume estimates based on height be within 10% (on average) of estimates based on both height and diameter measurements.

For hardwood sawlogs, volume variation within the dbh confidence interval is high for all height classes (Table 11 shaded area). This is because dbh versus height relationships are poor for hardwood sawlogs of the size necessary to produce a 20.32 cm (8 inch) top diameter . Average tree heights tend to level off while diameters tend to increase over time. As a result, hardwood sawlog volume estimates require dbh measurements for reasonable accuracy.

Adjustments for species and shortwood harvesting show similar trends for hardwoods as for softwoods (Tables 12 and 13). Differences due to species alone tend to be less than 10%, and shortwood harvesting has the greatest impact in shorter height classes (as much as 28% lower for yellow birch).

Adjustments in sawlog volumes due to species (Table 14) also tend to be low (generally less than 10%). This shows that diameter measurements are more important than species with respect to accurate estimates of hardwood sawlog volume.

Other Factors

Per hectare volumes shown in (or derived from) Tables 1-14 are only estimates of merchantable, shortwood, or sawlog volumes. On a site by site basis, actual volumes may differ from those listed for two main reasons:

1. Accuracy of volume functions used.

Volume functions given in Honer et al. (1983) were based on actual tree measurements, but cannot account for all variation found in tree form. For example, accuracy in total volume estimates vary between (+/-) 13.6 % for red spruce and (+/-) 34.3% for yellow birch. Accuracy is somewhat further reduced when estimating merchantable and sawlog volumes.

2. Volume estimates are gross estimates. No reduction is included for harvest residue or scalable defects.

Trees not cut, trees felled and left, and wood lost or broken during harvest can reduce merchantable volume by several percent. For example, Snow and Eddy (1982) reported an average of 8% logging residue on 89 clear-cuts surveyed in the late 1970s.

Rot can also reduce merchantable volume estimates. A 1995 survey of 215 balsam fir trees (average age about 43 years) showed 47% with some form of decay and 30% with soft rot which reduced potential merchantable volume by almost 4% (NSDNR 1997).

Stem quality defects (e.g. sweep, forks, internal rot, insect damage) may lead to reductions in sawlog volumes. Some of this sawlog cull can still be counted, however, as merchantable volume for other products.

Finally, it should be noted that diameter-independent volume tables listed in this report are for unmanaged stands. Diameter versus height relationships for trees in managed stands (plantations or thinned stands) could be different than those used to generate Tables 1, 3, 8, and 10. While these relationships can be estimated or corrected for, tree taper values inherent to volume functions used may not apply. Additional research is required to determine if changes in taper for managed trees would require modification to species volume functions.

SUMMARY

This report contains Tables that can be used to estimate per hectare softwood and hardwood volumes at different levels of confidence. Where accuracy requirements can be relaxed, volumes can be estimated using only height and stand basal area measurements. More accurate estimates can be obtained by applying correction factors which make adjustments for diameter class, species, and/or harvesting method. Users of these tables should be aware of their applicability and accuracy under different stand conditions. Where more detailed cruise information is required, the Product Cruise program (NSDNR 1996b) could be used in place of these Tables.

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Appendix 1

Describing the Tree of Average Basal Area

Quadratic Mean Diameter

The diameter of the tree of average basal area is referred to as the quadratic mean diameter.

1. To calculate the quadratic mean diameter (qdbh) for trees in fixed-area plots: (i) square the dbh value of each tree and add them together, (ii) divide by the number of trees measured, (iii) calculate the square root of this average value.

Example 1: Merchantable and sawlog qdbh for fixed-area plots.

All Plots (diameter in cm)				
Count	Merch. dbh	Merch. dbh^2	Sawlog dbh	Sawlog dbh^2
1	12.2	148.8	18.3	334.9
2	10.5	110.3	20.2	408.0
3	13.2	174.2	23.4	547.6
4	11.2	125.4	16.1	259.2
5	9.6	92.2	15.6	243.4
6	9.9	98.0	17.8	316.8
7	13.6	185.0	22.1	488.4
8	12.5	156.3	16.3	265.7
9	15.2	231.0	14.6	213.2
10	14.6	213.2	18.7	349.7
11	11.0	121.0	19.3	372.5
12	10.7	114.5	14.6	213.2
13	13.6	185.0	18.4	338.6
14	9.2	84.6	17.6	309.8
15	9.6	92.2	23.6	557.0
16	9.5	90.3		
17	10.2	104.0		
18	11.5	132.3		
19	13.2	174.2		
20	12.9	166.4		
21	14.0	196.0		
Sum		2994.8		5217.8
Mean		142.6		347.9
Sq. Root of Mean		11.9		18.7

2. For prism points, calculation of qdbh must take tree factors into account. The number of trees per hectare represented by each tree tallied in a prism sweep varies by tree diameter. Smaller trees tallied represent more trees per hectare than do larger trees. In order to determine quadratic mean diameter, it is necessary to first calculate the mean tree basal area for the stand as a whole. The diameter associated with this mean tree basal area is then equal to the quadratic mean diameter (Husch et al. 1982).

Example 2: Tally from 3 prism points using BAF 2 prism. Tree Factor represents stems per hectare (spha) associated with each tree tallied (based on individual tree size).

Tree Number	Merch. dbh (cm)	Tree Factor (spha)	Tree Number	Sawlog dbh (cm)	Tree Factor (spha)
1	11.2	203	1	42.0	14
2	9.6	276	2	36.7	19
3	9.9	260	3	29.1	30
4	13.6	138	4	15.4	107
5	9.6	276	5	21.2	57
6	11.3	199	6	16.3	96
7	10.5	231	7	24.6	42
8	12.5	163	8	18.6	74
9	12.8	155	9	20.1	63
10	9.6	276	10	17.5	83
11	13.9	132	11	16.0	99
12	15.2	110	12	17.9	79
13	10.3	240	13	18.6	74
14	12.6	160	14	25.6	39
15	9.8	265	15	18.9	71
16	16.3	96	16	19.6	66
17	14.5	121	17	30.1	28
18	12.8	155	18	22.5	50
19	11.6	189			
20	15.6	105			
21	10.9	214			
22	13.2	146			
23	11.0	210			
24	9.8	265			
25	13.4	142			
26	18.2	77			
27	12.3	168			
28	17.0	88			
29	15.6	105			
	Sum	5168		Sum	1093

Main Equations:

Tree Factor (spha) = (Prism BAF) ÷ (dbh^2 * 0.00007854)

qdbh = sq. root (BA ÷ 0.00007854)

Sample Calculations (merchantable qdbh):

Merch. BA/ha = (Merch. Tree Count) * (Prism BAF) ÷ (# Plots)
= 29 * 2 ÷ 3
= 19.33 m^2/ha

Merch. Stems/ha	=	(Sum Merch. Stems/ha) ÷ (# Plots)
	=	5168 ÷ 3
	=	1723 spha
Merch. Mean Tree BA	=	(Merch. BA/ha) ÷ (Merch. Stems/ha)
	=	(19.33 m^2/ha) ÷ (1723 spha)
	=	0.0112 m^2
Merch. qdbh	=	sq. root (0.0112 ÷ 0.00007854)
	=	11.9 cm

Sample Calculations (sawlog qdbh):

Sawlog BA/ha	=	(Sawlog Tree Count) * (Prism BAF) ÷ (# Plots)
	=	18 * 2 ÷ 3
	=	12.00 m^2/ha
Sawlog Stems/ha	=	(Sum Sawlog Stems/ha) ÷ (# Plots)
	=	1093 ÷ 3
	=	364 spha
Sawlog Mean Tree BA	=	(Sawlog BA/ha) ÷ (Sawlog Stems/ha)
	=	(12.00 m^2/ha) ÷ (364 spha)
	=	0.0330 m^2
Sawlog qdbh	=	sq. root (0.0330 ÷ 0.00007854)
	=	20.5 cm

Lorey's Height

Lorey's height is average tree height weighted by basal area (Husch et al. 1982).

Lorey's height can be estimated directly by taking the arithmetic average height of all trees contained in a prism sweep (this is the case because horizontal point sampling selects trees with probability proportional to basal area). However, it is usually impractical to measure the height of every tree in a plot. Alternatively, Lorey's height can be estimated by averaging the height measurements of representative co-dominate trees in each product class. This applies to both prism plots and fixed area plots.

Appendix 2

Details of Methods Used to Generate Volume Tables

Volume Calculations

For both softwoods and hardwoods, values were calculated for total volume, merchantable tree-length volume, merchantable shortwood volume (2.44 m lengths), and sawlog volume using several combinations of height class and diameter. In all cases, volumes were based on assumed total Lorey's height (m) and quadratic mean diameter (cm). Volumes were calculated for red spruce, balsam fir, white spruce, black spruce, red pine, white pine, hemlock, red and sugar maple, yellow birch, white birch, red oak, and trembling aspen.

Total tree volumes were calculated using Equation 14 in Honer et al. (1983). Species-specific coefficients were used in all cases except for red and sugar maple which were grouped under maple.

Merchantable and sawlog tree volumes were calculated using the adjusted squared diameter ratio method (Equation 22, Honer et al. 1983). For these calculations, species-specific coefficients were used except for hemlock, maple, red oak, and trembling aspen where specific coefficients did not exist. In these cases, coefficients associated with softwoods or hardwoods were used. For both softwood and hardwood merchantable volume calculations, stump height was assumed to be 0.15 m (6 inches) and top diameter 7.62 cm (3 inches) inside bark. For softwood sawlogs, stump height was assumed to be 0.15 m and top diameter 10.16 cm (4 inches) inside bark. For hardwood sawlogs, stump height was assumed to be 0.15 m and top diameter 20.32 cm (8 inches) inside bark.

Shortwood tree volume calculations were based on merchantable height minus a 1.22 m (4 ft.) top. This deduction was assumed to represent an average maximum loss of merchantable wood due to shortwood versus tree-length harvesting in each height class. Merchantable heights were estimated using Equation 18 in Honer et al. (1983) and solving for height (using previously calculated merchantable volumes). Species-specific coefficients were used in all calculations except for hemlock, maple, red oak, and trembling aspen where softwood or hardwood coefficients were used. After reducing estimated merchantable heights by 1.22 m, new merchantable tree volumes were calculated using the height ratio method (Equation 18).

Volume Tables

Individual species Volume Tables were produced based on: (i) calculated merchantable tree volume to merchantable tree basal area ratios, (ii) stand basal area values, (iii) total Lorey's height values, and (iv) average diameter versus height relationships for merchantable and sawlog size trees.

Average diameters for stands of given average heights were estimated using provincial Forest Inventory Plot (FIP) data. Data from more than 47,000 trees were analyzed and grouped into merchantable softwood (dbh $\geq$9.1 cm), sawlog softwood (dbh $\geq$14.1 cm), merchantable hardwood (dbh $\geq$9.1 cm), and sawlog hardwood (dbh $\geq$21.1 cm) classes. Derived values are listed below.

Correction factor tables for species, shortwood, and diameter class were generated for each stand basal area versus height class combination by calculating actual volumes for each case, and dividing these values by corresponding volumes based on average diameter versus height relationships for softwoods and hardwoods (Tables 1, 3, 8, and 10). This allows Tables 1, 3, 8, and 10 to be used as the basis for all volume estimates, regardless of whether correction factors are used or not.

Merchantable Softwood		Merchantable Hardwood		Sawlog Softwood		Sawlog Hardwood	
Height (m)	DBH (cm)	Height (m)	DBH (cm)	Height (m)	DBH (cm)	Height (m)	DBH (cm)
8	13.4	8	12.8	12	20.4	12	25.8
9	14.4	9	13.6	13	21.5	13	26.5
10	15.4	10	14.5	14	22.7	14	27.2
11	16.4	11	15.5	15	23.9	15	27.8
12	17.6	12	16.5	16	25.2	16	28.6
13	18.8	13	17.6	17	26.6	17	29.3
14	20.1	14	18.8	18	28.0	18	30.0
15	21.5	15	20.1	19	29.5	19	30.8
16	23.0	16	21.4	20	31.1	20	31.6
17	24.6	17	22.8	21	32.8	21	32.4
18	26.3	18	24.4	22	34.5	22	33.2
19	28.1	19	26.0	23	36.4	23	34.1
20	30.0	20	27.7	24	38.3	24	34.9
21	32.1	21	29.5				
22	34.3	22	31.5				

Sample Calculations (Red Spruce)

QDBH	=	Quadratic mean diameter outside bark (cm)
HTM	=	Total Lorey's tree height of merchantable trees (m)
HTS	=	Total Lorey's tree height of sawlog size trees (m)
TDLM	=	Top diameter limit merchantable: 7.62 cm
TDLS	=	Top diameter limit sawlog: 10.16 cm
STHT	=	Stump height: 0.15 m

B2	=	Regression coefficient=	0.169		(Red Spruce)
C1	=	Regression coefficient=	1.226		(Red Spruce)
C2	=	Regression coefficient=	315.832		(Red Spruce)
R1	=	Regression coefficient	=	0.9644	(Red Spruce)
R2	=	Regression coefficient	=	-0.0995	(Red Spruce)
R3	=	Regression coefficient	=	-0.7658	(Red Spruce)
P2	=	Regression coefficient	=	2.1149	(Red Spruce)
P3	=	Regression coefficient	=	-1.1465	(Red Spruce)

(A) Total Volume of merchantable (VTm) and sawlog (VTs) size trees in m^3 (Equation 14: Honer et al. 1983).

VTm = (0.0043891 * QDBH^2) * (1-0.04365 * B2)^2 / (C1 + (0.3048 * C2 / HTM))

and

VTs = (0.0043891 * QDBH^2) * (1-0.04365 * B2)^2 / (C1 + (0.3048 * C2 / HTS))

(B) Merchantable Volume (VM) in m^3 (Equation 22: Honer et al. 1983).

VM = VTm * (R1 + (R2 * X) + (R3 * X^2))
X = TDLM^2 / QDBH^2 * (1-0.04365 * B2)^-2 * (1 + STHT / HTM)

(C) Sawlog Volume (VS) in m^3 (Equation 22: Honer et al. 1983).

VS = VTs * (R1 + (R2 * X) + (R3 * X^2))
X = TDLS^2 / QDBH^2 * (1-0.04365 * B2)^-2 * (1 + STHT / HTS)

(D) Merchantable Height (MH) in metres (Equation 18 re-arranged: Honer et al. 1983).

MH = ((-P2 / HTM) + {(P2 / HTM)^2 - (4 * (P3 / HTM^2) * ((VM / VTm) - (P2*STHT / HTM) - (P3 * STHT^2 (P3*STHT^2 / HTM^2))))}^0.5) / (2 * P3 / HTM^2)

(E) Shortwood Merchantable Height (SH) in metres.

SH = MH - (4ft. * 0.3048 m/ft.)

(F) Shortwood Merchantable Volume (VSH) in m^3 (Equation 18: Honer et al. 1983).

VSH = VT * (P2 * ((SH / HTM) - (STHT / HTM)) + P3 * ((SH / HTM)^2 - (STHT / HTM)^2))

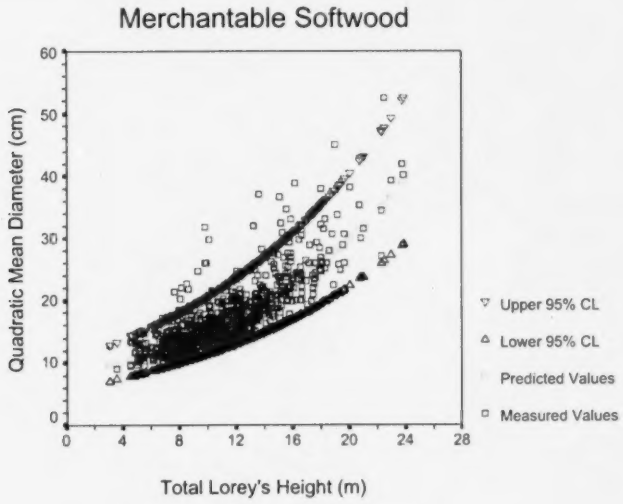
Appendix 3

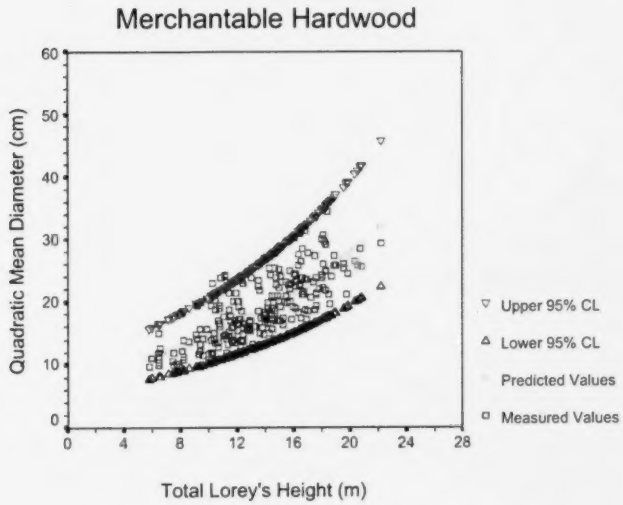
Diameter Versus Height Relationships Derived From Inventory Data

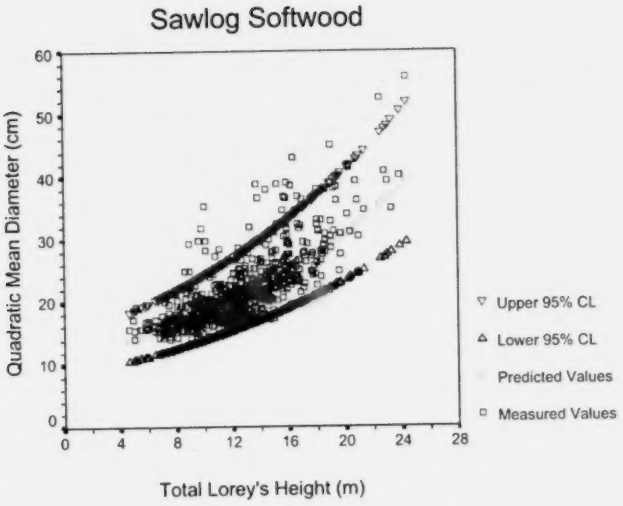
Merchantable Softwood:	$qdbh = e^{(2.0603 + 0.0671 * lorht)}$	$r^2 = 0.702$
Merchantable Hardwood:	$qdbh = e^{(2.0334 + 0.0644 * lorht)}$	$r^2 = 0.610$
Softwood Sawlog:	$qdbh = e^{(2.3887 + 0.0524 * lorht)}$	$r^2 = 0.581$
Hardwood Sawlog:	$qdbh = e^{(2.9488 + 0.0252 * lorht)}$	$r^2 = 0.186$

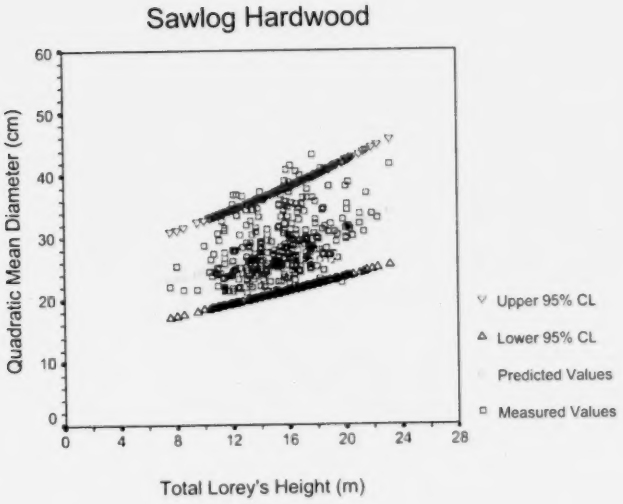
Where qdbh = quadratic mean diameter (cm) and lorht = total Lorey's height (m).

See the following graphs for data range, regression curves, and 95% confidence intervals. Confidence intervals shown correspond to shaded areas in Tables 2, 4, 9, and 11.






Sawlog Softwood
Quadratic Mean Diameter (cm)
Total Lorey's Height (m)
Upper 95% CL
Lower 95% CL
Predicted Values
Measured Values


Sawlog Hardwood
Quadratic Mean Diameter (cm)
Total Lorey's Height (m)
Upper 95% CL
Lower 95% CL
Predicted Values
Measured Values

Appendix 4

Volume and Area Conversion Factors [1]

m^3	x	35.3145	=	cu.ft.
ha	x	2.4710	=	acre
m^3/ha	x	14.2913	=	cu.ft./acre
m^3	÷	2.322	=	Cord (Swd)
m^3	÷	1.926	=	Cord (Hwd)
m^3	÷	5.663	=	Mfbm (Swd)
m^3	÷	5.663	=	Mfbm (Hwd)
m^3	÷	1.167	=	Tonne (Swd)
m^3	÷	0.963	=	Tonne (Hwd)
m^3	÷	1.0587	=	Ton (Swd)
m^3	÷	0.8736	=	Ton (Hwd)

(1) Derived from: Registry of Buyers 2000 Calendar Year Report (NSDNR Report FOR 2001-1).

Appendix 5A

Softwood Species Diameter Correction Factors

Following are Tables containing species-specific diameter class correction factors for merchantable volume, shortwood volume, and sawlog volume. Tables are presented in the order of:

Red Spruce
Balsam Fir
White Spruce
Black Spruce
Red Pine
White Pine
Hemlock

Table A5-1. Factors for Calculating Red Spruce Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH (cm)	Total Lorey's Height of Merchantable Trees in Metres														
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.85	0.82	0.79	0.77	0.76	0.74	0.73	0.72	0.71	0.71	0.70	0.69	0.69	0.68	0.68
11	0.98	0.94	0.91	0.89	0.87	0.85	0.84	0.83	0.82	0.81	0.80	0.80	0.79	0.79	0.78
12	1.07	1.02	0.99	0.97	0.95	0.93	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.85	0.85
13	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89
14	1.16	1.12	1.08	1.05	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.92
15	1.19	1.15	1.11	1.08	1.06	1.04	1.02	1.01	0.99	0.98	0.97	0.97	0.96	0.95	0.94
16	1.21	1.17	1.13	1.10	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96
17	1.23	1.18	1.14	1.11	1.09	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.99	0.98	0.97
18	1.24	1.19	1.15	1.12	1.10	1.08	1.06	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.98
19	1.25	1.20	1.16	1.13	1.11	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.00	1.00	0.99
20	1.26	1.21	1.17	1.14	1.11	1.09	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.00	1.00
21	1.27	1.21	1.18	1.14	1.12	1.10	1.08	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00
22	1.27	1.22	1.18	1.15	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.01	1.00
23	1.27	1.22	1.18	1.15	1.13	1.11	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.01	1.01
24	1.28	1.23	1.19	1.15	1.13	1.11	1.09	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01
25	1.28	1.23	1.19	1.16	1.13	1.11	1.09	1.08	1.07	1.05	1.04	1.03	1.03	1.02	1.01
26	1.28	1.23	1.19	1.16	1.13	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.01
27	1.28	1.23	1.19	1.16	1.14	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.02
28	1.29	1.23	1.19	1.16	1.14	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.02
29	1.29	1.24	1.20	1.16	1.14	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.02
30	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02
31	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02
32	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02
33	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.04	1.03	1.02
34	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.09	1.08	1.06	1.05	1.04	1.04	1.03	1.02
35	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.09	1.08	1.06	1.05	1.05	1.04	1.03	1.02
36	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.09	1.08	1.07	1.05	1.05	1.04	1.03	1.02
37		1.24	1.20	1.17	1.14	1.12	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.03	1.02
38			1.20	1.17	1.15	1.12	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.03	1.02
39				1.17	1.15	1.12	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.03	1.02
40					1.15	1.12	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.03	1.02
41						1.12	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.03	1.02
42							1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.03	1.02
43								1.09	1.08	1.07	1.06	1.05	1.04	1.03	1.02
44									1.08	1.07	1.06	1.05	1.04	1.03	1.03
45										1.07	1.06	1.05	1.04	1.03	1.03
46											1.06	1.05	1.04	1.03	1.03
47												1.05	1.04	1.03	1.03
48													1.04	1.03	1.03
49														1.03	1.03
50															1.03

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-2. Factors for Calculating Red Spruce Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.57	0.58	0.59	0.59	0.59	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
11	0.74	0.74	0.74	0.74	0.73	0.73	0.73	0.73	0.73	0.72	0.72	0.72	0.72	0.72	0.72
12	0.86	0.85	0.84	0.83	0.83	0.82	0.82	0.81	0.81	0.81	0.80	0.80	0.80	0.79	0.79
13	0.95	0.93	0.91	0.90	0.89	0.88	0.88	0.87	0.87	0.86	0.86	0.85	0.85	0.85	0.84
14	1.01	0.99	0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.90	0.89	0.89	0.88	0.88
15	1.06	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.94	0.93	0.92	0.92	0.91	0.91	0.91
16	1.09	1.06	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.93	0.93
17	1.12	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94
18	1.15	1.11	1.08	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96	0.95
19	1.17	1.13	1.10	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
20	1.20	1.15	1.11	1.09	1.07	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.98	0.98	0.97
21		1.16	1.13	1.10	1.08	1.06	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.98	0.98
22		1.19	1.14	1.11	1.08	1.07	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.98
23			1.15	1.12	1.09	1.07	1.06	1.04	1.03	1.02	1.01	1.01	1.00	0.99	0.99
24				1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.00	1.00	0.99
25					1.11	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	0.99
26						1.09	1.07	1.06	1.05	1.03	1.03	1.02	1.01	1.00	1.00
27							1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.01	1.00
28							1.08	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00
29								1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.00
30									1.06	1.05	1.04	1.03	1.02	1.01	1.00
31									1.06	1.05	1.04	1.03	1.02	1.01	1.01
32										1.05	1.04	1.03	1.02	1.01	1.01
33										1.06	1.04	1.03	1.02	1.02	1.01
34											1.04	1.03	1.02	1.02	1.01
35											1.05	1.04	1.03	1.02	1.01
36												1.04	1.03	1.02	1.01
37												1.04	1.03	1.02	1.01
38													1.03	1.02	1.01
39													1.03	1.02	1.01
40														1.02	1.02
41														1.02	1.02
42														1.03	1.02
43															1.02
44															1.02
45															1.02
46															
47															
48															
49															
50															

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-3. Factors for Calculating Red Spruce Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
16	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.85	0.85
17	1.02	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88
18	1.05	1.03	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91
19	1.08	1.05	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.93
20	1.10	1.07	1.05	1.03	1.02	1.01	0.99	0.98	0.97	0.97	0.96	0.95	0.94
21	1.11	1.09	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.96
22	1.12	1.10	1.08	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.97
23	1.13	1.11	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97
24	1.14	1.12	1.10	1.08	1.06	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.98
25	1.15	1.12	1.10	1.08	1.07	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.99
26	1.15	1.13	1.11	1.09	1.07	1.06	1.05	1.03	1.02	1.01	1.01	1.00	0.99
27	1.16	1.13	1.11	1.09	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.00	1.00
28	1.16	1.14	1.12	1.10	1.08	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00
29	1.17	1.14	1.12	1.10	1.08	1.07	1.06	1.04	1.03	1.03	1.02	1.01	1.00
30	1.17	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.01	1.00
31	1.17	1.15	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.01	1.01
32	1.17	1.15	1.13	1.11	1.09	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01
33	1.18	1.15	1.13	1.11	1.09	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01
34	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.05	1.04	1.04	1.03	1.02	1.01
35	1.18	1.15	1.13	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.01
36	1.18	1.15	1.13	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.01
37	1.18	1.16	1.13	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.01
38	1.18	1.16	1.13	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.02
39	1.18	1.16	1.14	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.02
40	1.18	1.16	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.02
41	1.19	1.16	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02
42	1.19	1.16	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02
43	1.19	1.16	1.14	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02
44		1.16	1.14	1.12	1.10	1.09	1.08	1.06	1.05	1.04	1.03	1.03	1.02
45			1.14	1.12	1.10	1.09	1.08	1.06	1.05	1.04	1.04	1.03	1.02
46				1.12	1.10	1.09	1.08	1.06	1.05	1.04	1.04	1.03	1.02
47					1.10	1.09	1.08	1.06	1.05	1.04	1.04	1.03	1.02
48						1.09	1.08	1.07	1.05	1.05	1.04	1.03	1.02
49							1.08	1.07	1.06	1.05	1.04	1.03	1.02
50								1.07	1.06	1.05	1.04	1.03	1.02
51									1.06	1.05	1.04	1.03	1.02
52										1.05	1.04	1.03	1.02
53											1.04	1.03	1.02
54												1.03	1.02
55													1.02

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 10.16 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Softwood Sawlog Volume (m^3/ha) in Table 3.

Table A5-4. Factors for Calculating Balsam Fir Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.81	0.78	0.75	0.72	0.70	0.69	0.67	0.66	0.65	0.63	0.63	0.62	0.61	0.60	0.59
11	0.94	0.90	0.86	0.83	0.81	0.79	0.77	0.76	0.74	0.73	0.72	0.71	0.70	0.69	0.68
12	1.02	0.98	0.94	0.91	0.88	0.86	0.84	0.82	0.81	0.79	0.78	0.77	0.76	0.75	0.74
13	1.08	1.03	0.99	0.95	0.93	0.90	0.88	0.86	0.85	0.83	0.82	0.81	0.80	0.79	0.78
14	1.11	1.06	1.02	0.99	0.96	0.93	0.91	0.89	0.88	0.86	0.85	0.84	0.82	0.81	0.80
15	1.14	1.09	1.04	1.01	0.98	0.95	0.93	0.91	0.90	0.88	0.87	0.86	0.84	0.83	0.82
16	1.16	1.10	1.06	1.02	1.00	0.97	0.95	0.93	0.91	0.90	0.88	0.87	0.86	0.85	0.84
17	1.17	1.12	1.07	1.04	1.01	0.98	0.96	0.94	0.92	0.91	0.89	0.88	0.87	0.86	0.85
18	1.18	1.13	1.08	1.05	1.02	0.99	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.86	0.85
19	1.19	1.14	1.09	1.05	1.02	1.00	0.97	0.95	0.94	0.92	0.91	0.89	0.88	0.87	0.86
20	1.20	1.14	1.10	1.06	1.03	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86
21	1.20	1.15	1.10	1.06	1.03	1.01	0.98	0.96	0.95	0.93	0.92	0.90	0.89	0.88	0.87
22	1.21	1.15	1.10	1.07	1.04	1.01	0.99	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.87
23	1.21	1.15	1.11	1.07	1.04	1.01	0.99	0.97	0.95	0.94	0.92	0.91	0.89	0.88	0.87
24	1.21	1.16	1.11	1.07	1.04	1.01	0.99	0.97	0.95	0.94	0.92	0.91	0.90	0.88	0.87
25	1.22	1.16	1.11	1.07	1.04	1.02	0.99	0.97	0.96	0.94	0.92	0.91	0.90	0.89	0.88
26	1.22	1.16	1.11	1.08	1.04	1.02	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.88
27	1.22	1.16	1.11	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88
28	1.22	1.16	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88
29	1.22	1.16	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88
30	1.22	1.16	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.92	0.90	0.89	0.88
31	1.22	1.16	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.92	0.90	0.89	0.88
32	1.22	1.17	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.95	0.93	0.92	0.90	0.89	0.88
33	1.22	1.17	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.95	0.93	0.92	0.90	0.89	0.88
34	1.23	1.17	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.95	0.93	0.92	0.90	0.89	0.88
35	1.23	1.17	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.89	0.88
36	1.23	1.17	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.89	0.88
37		1.17	1.12	1.08	1.05	1.02	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.89	0.88
38			1.12	1.08	1.05	1.03	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.89	0.88
39				1.08	1.05	1.03	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.89	0.88
40					1.05	1.03	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.89	0.88
41						1.03	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.89	0.88
42							1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.89	0.88
43								0.98	0.96	0.95	0.93	0.92	0.91	0.90	0.88
44									0.96	0.95	0.93	0.92	0.91	0.90	0.88
45										0.95	0.93	0.92	0.91	0.90	0.88
46											0.93	0.92	0.91	0.90	0.88
47												0.92	0.91	0.90	0.88
48													0.91	0.90	0.88
49														0.90	0.88
50															0.88

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-5. Factors for Calculating Balsam Fir Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.52	0.53	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.52	0.52
11	0.69	0.69	0.68	0.68	0.67	0.67	0.66	0.66	0.65	0.65	0.64	0.64	0.63	0.63	0.62
12	0.81	0.79	0.78	0.77	0.76	0.75	0.74	0.73	0.72	0.72	0.71	0.70	0.70	0.69	0.69
13	0.88	0.86	0.85	0.83	0.82	0.81	0.79	0.78	0.78	0.77	0.76	0.75	0.74	0.74	0.73
14	0.94	0.91	0.89	0.88	0.86	0.85	0.83	0.82	0.81	0.80	0.79	0.78	0.78	0.77	0.76
15	0.98	0.95	0.93	0.91	0.89	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.80	0.79	0.78
16	1.01	0.98	0.95	0.93	0.91	0.90	0.88	0.87	0.85	0.84	0.83	0.82	0.82	0.91	0.80
17	1.04	1.00	0.97	0.95	0.93	0.91	0.90	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.81
18	1.06	1.02	0.99	0.96	0.94	0.92	0.91	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.82
19	1.07	1.03	1.00	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.86	0.85	0.84	0.84	0.83
20	1.08	1.04	1.01	0.98	0.96	0.94	0.92	0.91	0.90	0.88	0.87	0.86	0.85	0.84	0.83
21	1.09	1.05	1.02	0.99	0.97	0.95	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84
22	1.10	1.06	1.02	1.00	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.84
23	1.11	1.06	1.03	1.00	0.98	0.96	0.94	0.92	0.91	0.90	0.88	0.87	0.86	0.85	0.84
24	1.11	1.07	1.03	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.85	0.85
25	1.12	1.07	1.04	1.01	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85
26	1.12	1.08	1.04	1.01	0.99	0.96	0.95	0.93	0.92	0.90	0.89	0.88	0.87	0.86	0.85
27	1.13	1.08	1.04	1.01	0.99	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.87	0.86	0.85
28	1.13	1.08	1.04	1.01	0.99	0.97	0.95	0.93	0.92	0.91	0.89	0.88	0.87	0.86	0.85
29	1.13	1.08	1.05	1.02	0.99	0.97	0.95	0.93	0.92	0.91	0.89	0.88	0.87	0.86	0.85
30	1.13	1.09	1.05	1.02	0.99	0.97	0.95	0.94	0.92	0.91	0.90	0.88	0.87	0.86	0.85
31	1.14	1.09	1.05	1.02	0.99	0.97	0.95	0.94	0.92	0.91	0.90	0.88	0.87	0.86	0.85
32	1.14	1.09	1.05	1.02	0.99	0.97	0.95	0.94	0.92	0.91	0.90	0.89	0.87	0.86	0.86
33	1.14	1.09	1.05	1.02	1.00	0.97	0.95	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86
34	1.14	1.09	1.05	1.02	1.00	0.97	0.96	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86
35	1.14	1.09	1.05	1.02	1.00	0.98	0.96	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86
36	1.14	1.09	1.05	1.02	1.00	0.98	0.96	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86
37		1.09	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86
38			1.06	1.02	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86
39				1.02	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86
40					1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86
41						0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86
42							0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86
43								0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86
44									0.93	0.91	0.90	0.89	0.88	0.87	0.86
45										0.91	0.90	0.89	0.88	0.87	0.86
46											0.90	0.89	0.88	0.87	0.86
47												0.89	0.88	0.87	0.86
48													0.88	0.87	0.86
49														0.87	0.86
50															0.86

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-6. Factors for Calculating Balsam Fir Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
16	0.91	0.89	0.87	0.85	0.83	0.81	0.80	0.78	0.77	0.76	0.75	0.74	0.73
17	0.95	0.92	0.90	0.88	0.86	0.84	0.83	0.82	0.80	0.79	0.78	0.77	0.76
18	0.98	0.95	0.93	0.91	0.89	0.87	0.85	0.84	0.83	0.81	0.80	0.79	0.78
19	1.00	0.97	0.95	0.92	0.91	0.89	0.87	0.86	0.84	0.83	0.82	0.81	0.80
20	1.02	0.99	0.96	0.94	0.92	0.90	0.89	0.87	0.86	0.85	0.83	0.82	0.81
21	1.03	1.00	0.97	0.95	0.93	0.91	0.90	0.88	0.87	0.86	0.84	0.83	0.82
22	1.04	1.01	0.98	0.96	0.94	0.92	0.91	0.89	0.88	0.86	0.85	0.84	0.83
23	1.05	1.02	0.99	0.97	0.95	0.93	0.91	0.90	0.88	0.87	0.86	0.85	0.84
24	1.06	1.03	1.00	0.98	0.95	0.94	0.92	0.90	0.89	0.88	0.87	0.85	0.84
25	1.06	1.03	1.00	0.98	0.96	0.94	0.92	0.91	0.89	0.88	0.87	0.86	0.85
26	1.07	1.04	1.01	0.98	0.96	0.95	0.93	0.91	0.90	0.89	0.87	0.86	0.85
27	1.07	1.04	1.01	0.99	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.86	0.85
28	1.07	1.04	1.02	0.99	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.87	0.86
29	1.08	1.04	1.02	0.99	0.97	0.95	0.94	0.92	0.91	0.89	0.88	0.87	0.86
30	1.08	1.05	1.02	1.00	0.97	0.96	0.94	0.92	0.91	0.90	0.88	0.87	0.86
31	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.92	0.91	0.90	0.88	0.87	0.86
32	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86
33	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.86
34	1.08	1.05	1.03	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87
35	1.09	1.05	1.03	1.00	0.98	0.96	0.95	0.93	0.91	0.90	0.89	0.88	0.87
36	1.09	1.06	1.03	1.00	0.98	0.96	0.95	0.93	0.92	0.90	0.89	0.88	0.87
37	1.09	1.06	1.03	1.00	0.98	0.96	0.95	0.93	0.92	0.90	0.89	0.88	0.87
38	1.09	1.06	1.03	1.01	0.98	0.96	0.95	0.93	0.92	0.90	0.89	0.88	0.87
39	1.09	1.06	1.03	1.01	0.98	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.87
40	1.09	1.06	1.03	1.01	0.99	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.87
41	1.09	1.06	1.03	1.01	0.99	0.97	0.95	0.93	0.92	0.91	0.89	0.88	0.87
42	1.09	1.06	1.03	1.01	0.99	0.97	0.95	0.93	0.92	0.91	0.89	0.88	0.87
43	1.09	1.06	1.03	1.01	0.99	0.97	0.95	0.93	0.92	0.91	0.89	0.88	0.87
44		1.06	1.03	1.01	0.99	0.97	0.95	0.93	0.92	0.91	0.89	0.88	0.87
45			1.03	1.01	0.99	0.97	0.95	0.93	0.92	0.91	0.89	0.88	0.87
46				1.01	0.99	0.97	0.95	0.93	0.92	0.91	0.89	0.88	0.87
47					0.99	0.97	0.95	0.94	0.92	0.91	0.89	0.88	0.87
48						0.97	0.95	0.94	0.92	0.91	0.89	0.88	0.87
49							0.95	0.94	0.92	0.91	0.90	0.88	0.87
50								0.94	0.92	0.91	0.90	0.88	0.87
51									0.92	0.91	0.90	0.88	0.87
52										0.91	0.90	0.88	0.87
53											0.90	0.88	0.87
54												0.88	0.87
55													0.87

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 10.16 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Softwood Sawlog Volume (m^3/ha) in Table 3.

Table A5-7. Factors for Calculating White Spruce Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.70	0.68	0.65	0.64	0.62	0.61	0.60	0.59	0.59	0.58	0.57	0.57	0.56	0.56	0.56
11	0.83	0.80	0.77	0.75	0.73	0.72	0.71	0.70	0.69	0.68	0.68	0.67	0.66	0.66	0.65
12	0.92	0.88	0.85	0.83	0.81	0.79	0.78	0.77	0.76	0.75	0.74	0.74	0.73	0.72	0.72
13	0.97	0.93	0.90	0.88	0.86	0.84	0.83	0.82	0.81	0.80	0.79	0.78	0.78	0.77	0.76
14	1.02	0.98	0.94	0.92	0.90	0.88	0.87	0.85	0.84	0.83	0.82	0.82	0.81	0.80	0.80
15	1.05	1.00	0.97	0.95	0.92	0.91	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.83	0.82
16	1.07	1.03	0.99	0.97	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.84
17	1.09	1.04	1.01	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.85
18	1.10	1.06	1.02	1.00	0.97	0.95	0.94	0.92	0.91	0.90	0.89	0.88	0.88	0.87	0.86
19	1.11	1.07	1.03	1.01	0.98	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.87
20	1.12	1.08	1.04	1.01	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88
21	1.13	1.09	1.05	1.02	1.00	0.98	0.96	0.95	0.94	0.92	0.92	0.91	0.90	0.89	0.89
22	1.14	1.09	1.05	1.03	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89
23	1.14	1.10	1.06	1.03	1.01	0.99	0.97	0.96	0.95	0.93	0.92	0.92	0.91	0.90	0.89
24	1.15	1.10	1.06	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90
25	1.15	1.10	1.07	1.04	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90
26	1.15	1.11	1.07	1.04	1.02	1.00	0.98	0.97	0.95	0.94	0.93	0.93	0.92	0.91	0.90
27	1.16	1.11	1.07	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91
28	1.16	1.11	1.08	1.05	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91
29	1.16	1.11	1.08	1.05	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.92	0.91
30	1.16	1.12	1.08	1.05	1.03	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.92	0.91
31	1.17	1.12	1.08	1.05	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.93	0.92	0.91
32	1.17	1.12	1.08	1.05	1.03	1.01	0.99	0.98	0.97	0.95	0.94	0.94	0.93	0.92	0.91
33	1.17	1.12	1.08	1.05	1.03	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
34	1.17	1.12	1.08	1.06	1.03	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
35	1.17	1.12	1.09	1.06	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.92
36	1.17	1.12	1.09	1.06	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.92
37		1.13	1.09	1.06	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.92
38			1.09	1.06	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.92
39				1.06	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.93	0.92
40					1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.93	0.92
41						1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.93	0.92
42							1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.93	0.92
43								0.99	0.97	0.96	0.95	0.94	0.94	0.93	0.92
44									0.97	0.96	0.95	0.94	0.94	0.93	0.92
45										0.96	0.95	0.94	0.94	0.93	0.92
46											0.95	0.94	0.94	0.93	0.92
47												0.94	0.94	0.93	0.92
48													0.94	0.93	0.92
49														0.93	0.92
50															0.92

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-8. Factors for Calculating White Spruce Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.41	0.43	0.44	0.45	0.46	0.46	0.47	0.47	0.47	0.47	0.48	0.48	0.48	0.48	0.48
11	0.58	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
12	0.70	0.69	0.69	0.69	0.68	0.68	0.68	0.67	0.67	0.67	0.67	0.67	0.66	0.66	0.66
13	0.78	0.77	0.76	0.75	0.75	0.74	0.74	0.73	0.73	0.73	0.72	0.72	0.72	0.71	0.71
14	0.84	0.83	0.82	0.81	0.80	0.79	0.78	0.78	0.77	0.77	0.76	0.76	0.76	0.75	0.75
15	0.89	0.87	0.86	0.84	0.83	0.82	0.82	0.81	0.80	0.80	0.79	0.79	0.79	0.78	0.78
16	0.93	0.91	0.89	0.87	0.86	0.85	0.84	0.84	0.83	0.82	0.82	0.81	0.81	0.80	0.80
17	0.96	0.93	0.91	0.90	0.88	0.87	0.86	0.86	0.85	0.84	0.84	0.83	0.83	0.82	0.82
18	0.99	0.96	0.94	0.92	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.84	0.84	0.83	0.83
19	1.01	0.98	0.95	0.93	0.92	0.91	0.89	0.88	0.88	0.87	0.86	0.86	0.85	0.85	0.84
20	1.03	0.99	0.97	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.86	0.85
21	1.05	1.01	0.98	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.86
22	1.06	1.02	0.99	0.97	0.95	0.94	0.92	0.91	0.90	0.90	0.89	0.88	0.88	0.87	0.86
23	1.08	1.04	1.00	0.98	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.88	0.87
24		1.05	1.01	0.99	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.87
25		1.06	1.02	1.00	0.98	0.96	0.94	0.93	0.92	0.91	0.90	0.90	0.89	0.88	0.88
26			1.03	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88
27				1.01	0.99	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89	0.89
28				1.02	0.99	0.97	0.96	0.95	0.93	0.92	0.92	0.91	0.90	0.89	0.89
29					1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89
30						0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89
31						0.99	0.97	0.96	0.94	0.93	0.92	0.92	0.91	0.90	0.90
32							0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90
33								0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90
34								0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90
35									0.96	0.94	0.93	0.92	0.92	0.91	0.90
36										0.95	0.94	0.93	0.92	0.91	0.90
37										0.95	0.94	0.93	0.92	0.91	0.91
38											0.94	0.93	0.92	0.91	0.91
39											0.94	0.93	0.92	0.91	0.91
40												0.93	0.92	0.92	0.91
41													0.93	0.92	0.91
42													0.93	0.92	0.91
43														0.92	0.91
44														0.92	0.91
45															0.91
46															0.92
47															
48															
49															
50															

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-9. Factors for Calculating White Spruce Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
16	0.84	0.82	0.81	0.79	0.78	0.77	0.76	0.75	0.74	0.74	0.73	0.72	0.72
17	0.88	0.86	0.85	0.83	0.82	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.75
18	0.91	0.89	0.88	0.86	0.85	0.84	0.83	0.82	0.81	0.80	0.79	0.79	0.78
19	0.94	0.92	0.90	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.80
20	0.96	0.94	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.82
21	0.98	0.95	0.94	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.84	0.83
22	0.99	0.97	0.95	0.93	0.92	0.90	0.89	0.88	0.87	0.87	0.86	0.85	0.84
23	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.85
24	1.01	0.99	0.97	0.95	0.94	0.92	0.91	0.90	0.89	0.88	0.88	0.87	0.86
25	1.02	1.00	0.98	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.87
26	1.03	1.00	0.98	0.96	0.95	0.94	0.92	0.91	0.90	0.90	0.89	0.88	0.87
27	1.03	1.01	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88
28	1.04	1.01	0.99	0.98	0.96	0.95	0.93	0.92	0.91	0.91	0.90	0.89	0.88
29	1.04	1.02	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89
30	1.04	1.02	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89
31	1.05	1.02	1.00	0.99	0.97	0.96	0.94	0.93	0.92	0.92	0.91	0.90	0.89
32	1.05	1.03	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90
33	1.05	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90
34	1.06	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90
35	1.06	1.03	1.01	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.92	0.91	0.90
36	1.06	1.04	1.02	1.00	0.98	0.97	0.96	0.94	0.93	0.93	0.92	0.91	0.90
37	1.06	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
38	1.06	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91
39	1.07	1.04	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91
40	1.07	1.04	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.92	0.91
41	1.07	1.04	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.92	0.91
42	1.07	1.04	1.02	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.92	0.91
43	1.07	1.05	1.02	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.93	0.92	0.91
44		1.05	1.03	1.01	0.99	0.98	0.97	0.95	0.94	0.93	0.93	0.92	0.91
45			1.03	1.01	0.99	0.98	0.97	0.95	0.94	0.94	0.93	0.92	0.91
46				1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
47					0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
48						0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
49							0.97	0.96	0.95	0.94	0.93	0.92	0.91
50								0.96	0.95	0.94	0.93	0.92	0.92
51									0.95	0.94	0.93	0.92	0.92
52										0.94	0.93	0.92	0.92
53											0.93	0.92	0.92
54												0.92	0.92
55													0.92

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 10.16 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Softwood Sawlog Volume (m^3/ha) in Table 3.

Table A5-10. Factors for Calculating Black Spruce Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.75	0.72	0.69	0.67	0.66	0.65	0.63	0.63	0.62	0.61	0.60	0.60	0.59	0.59	0.58
11	0.88	0.84	0.81	0.79	0.77	0.76	0.74	0.73	0.72	0.71	0.71	0.70	0.69	0.69	0.68
12	0.96	0.92	0.89	0.87	0.85	0.83	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74
13	1.02	0.98	0.94	0.92	0.89	0.88	0.86	0.85	0.84	0.83	0.82	0.81	0.80	0.79	0.79
14	1.06	1.01	0.98	0.95	0.93	0.91	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.82
15	1.09	1.04	1.01	0.98	0.95	0.93	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.84
16	1.11	1.06	1.02	1.00	0.97	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
17	1.12	1.08	1.04	1.01	0.98	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
18	1.14	1.09	1.05	1.02	1.00	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
19	1.14	1.10	1.06	1.03	1.00	0.98	0.97	0.95	0.94	0.92	0.91	0.90	0.90	0.89	0.88
20	1.15	1.10	1.07	1.03	1.01	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89
21	1.16	1.11	1.07	1.04	1.01	0.99	0.98	0.96	0.95	0.94	0.92	0.92	0.91	0.90	0.89
22	1.16	1.11	1.07	1.04	1.02	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
23	1.17	1.12	1.08	1.05	1.02	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90
24	1.17	1.12	1.08	1.05	1.03	1.00	0.99	0.97	0.96	0.94	0.93	0.92	0.92	0.91	0.90
25	1.17	1.12	1.08	1.05	1.03	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
26	1.18	1.13	1.09	1.06	1.03	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
27	1.18	1.13	1.09	1.06	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90
28	1.18	1.13	1.09	1.06	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.91
29	1.18	1.13	1.09	1.06	1.03	1.01	0.99	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.91
30	1.18	1.13	1.09	1.06	1.04	1.01	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.92	0.91
31	1.18	1.13	1.09	1.06	1.04	1.01	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.92	0.91
32	1.18	1.13	1.09	1.06	1.04	1.02	1.00	0.98	0.97	0.96	0.94	0.93	0.93	0.92	0.91
33	1.18	1.13	1.09	1.06	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
34	1.19	1.13	1.10	1.06	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
35	1.19	1.14	1.10	1.06	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
36	1.19	1.14	1.10	1.07	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
37		1.14	1.10	1.07	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
38			1.10	1.07	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
39				1.07	1.04	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91
40					1.04	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91
41						1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91
42							1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91
43								0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91
44									0.97	0.96	0.95	0.94	0.93	0.92	0.91
45										0.96	0.95	0.94	0.93	0.92	0.91
46											0.95	0.94	0.93	0.92	0.91
47												0.94	0.93	0.92	0.91
48													0.93	0.92	0.91
49														0.92	0.91
50															0.92

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-11. Factors for Calculating Black Spruce Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.47	0.48	0.49	0.50	0.50	0.50	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
11	0.64	0.64	0.64	0.64	0.64	0.64	0.63	0.63	0.63	0.63	0.63	0.62	0.62	0.62	0.62
12	0.76	0.75	0.74	0.74	0.73	0.72	0.72	0.71	0.71	0.71	0.70	0.70	0.70	0.69	0.69
13	0.84	0.83	0.81	0.80	0.79	0.78	0.78	0.77	0.77	0.76	0.76	0.75	0.75	0.74	0.74
14	0.90	0.88	0.86	0.85	0.84	0.83	0.82	0.81	0.80	0.80	0.79	0.79	0.78	0.78	0.77
15	0.95	0.92	0.90	0.89	0.87	0.86	0.85	0.84	0.83	0.83	0.82	0.81	0.81	0.80	0.80
16	0.98	0.95	0.93	0.91	0.90	0.88	0.87	0.86	0.86	0.85	0.84	0.83	0.83	0.82	0.82
17	1.01	0.98	0.95	0.93	0.92	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.84	0.84	0.83
18	1.03	1.00	0.97	0.95	0.93	0.92	0.91	0.89	0.89	0.88	0.87	0.86	0.86	0.85	0.84
19	1.05	1.01	0.99	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85
20	1.07	1.03	1.00	0.98	0.96	0.94	0.93	0.91	0.90	0.90	0.89	0.88	0.87	0.87	0.86
21	1.08	1.04	1.01	0.99	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.87	0.87
22	1.10	1.05	1.02	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.87
23	1.11	1.06	1.03	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.87
24		1.07	1.03	1.01	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.88
25		1.08	1.04	1.01	0.99	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88
26		1.10	1.05	1.02	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.90	0.89	0.88
27			1.05	1.02	1.00	0.98	0.96	0.95	0.94	0.92	0.92	0.91	0.90	0.89	0.88
28			1.06	1.03	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89
29				1.03	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89
30				1.03	1.01	0.99	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89
31				1.04	1.01	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.91	0.90	0.89
32					1.01	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.91	0.90	0.89
33					1.01	0.99	0.97	0.96	0.95	0.93	0.92	0.92	0.91	0.90	0.89
34					1.02	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
35					1.02	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
36						1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90
37						1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90
38						1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90
39							0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90
40							0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90
41							0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90
42							0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90
43								0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90
44									0.95	0.94	0.93	0.92	0.91	0.91	0.90
45										0.94	0.93	0.92	0.91	0.91	0.90
46											0.93	0.92	0.92	0.91	0.90
47												0.92	0.92	0.91	0.90
48													0.92	0.91	0.90
49														0.91	0.90
50															0.90

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-12. Factors for Calculating Black Spruce Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
16	0.88	0.86	0.84	0.82	0.81	0.80	0.79	0.78	0.77	0.76	0.75	0.75	0.74
17	0.92	0.90	0.88	0.86	0.85	0.83	0.82	0.81	0.80	0.80	0.79	0.78	0.77
18	0.95	0.93	0.91	0.89	0.88	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.80
19	0.97	0.95	0.93	0.91	0.90	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.82
20	0.99	0.97	0.95	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.83
21	1.01	0.98	0.96	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.85
22	1.02	0.99	0.97	0.95	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
23	1.03	1.00	0.98	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
24	1.03	1.01	0.99	0.97	0.95	0.94	0.93	0.91	0.90	0.89	0.89	0.88	0.87
25	1.04	1.02	0.99	0.98	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
26	1.05	1.02	1.00	0.98	0.96	0.95	0.94	0.92	0.91	0.90	0.90	0.89	0.88
27	1.05	1.03	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
28	1.05	1.03	1.01	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89
29	1.06	1.03	1.01	0.99	0.97	0.96	0.95	0.94	0.92	0.91	0.91	0.90	0.89
30	1.06	1.04	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
31	1.06	1.04	1.02	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89
32	1.07	1.04	1.02	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89
33	1.07	1.04	1.02	1.00	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.90
34	1.07	1.04	1.02	1.00	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.91	0.90
35	1.07	1.04	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
36	1.07	1.05	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
37	1.07	1.05	1.02	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
38	1.07	1.05	1.03	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
39	1.08	1.05	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90
40	1.08	1.05	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90
41	1.08	1.05	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90
42	1.08	1.05	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90
43	1.08	1.05	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.91
44		1.05	1.03	1.01	0.99	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.91
45			1.03	1.01	0.99	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.91
46				1.01	0.99	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.91
47					1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.92	0.91
48						0.98	0.97	0.95	0.94	0.93	0.92	0.92	0.91
49							0.97	0.95	0.94	0.93	0.92	0.92	0.91
50								0.96	0.94	0.93	0.92	0.92	0.91
51									0.94	0.93	0.92	0.92	0.91
52										0.93	0.93	0.92	0.91
53											0.93	0.92	0.91
54												0.92	0.91
55													0.91

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 10.16 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Softwood Sawlog Volume (m^3/ha) in Table 3.

Table A5-13. Factors for Calculating Red Pine Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.71	0.69	0.67	0.66	0.65	0.64	0.63	0.63	0.62	0.62	0.62	0.62	0.61	0.61	0.61
11	0.87	0.84	0.82	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.75	0.75	0.74	0.74	0.74
12	0.97	0.93	0.91	0.89	0.88	0.86	0.85	0.85	0.84	0.84	0.83	0.83	0.83	0.82	0.82
13	1.03	1.00	0.97	0.95	0.93	0.92	0.91	0.90	0.90	0.89	0.89	0.88	0.88	0.88	0.88
14	1.08	1.04	1.01	0.99	0.97	0.96	0.95	0.94	0.94	0.93	0.92	0.92	0.92	0.91	0.91
15	1.11	1.07	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.94	0.94
16	1.13	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96
17	1.15	1.11	1.08	1.06	1.04	1.02	1.01	1.00	1.00	0.99	0.98	0.98	0.98	0.97	0.97
18	1.16	1.12	1.09	1.07	1.05	1.04	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.98	0.98
19	1.17	1.13	1.10	1.08	1.06	1.04	1.03	1.02	1.02	1.01	1.00	1.00	1.00	0.99	0.99
20	1.18	1.14	1.11	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
21	1.19	1.14	1.11	1.09	1.07	1.06	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.00	1.00
22	1.19	1.15	1.12	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01
23	1.19	1.15	1.12	1.10	1.08	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
24	1.20	1.16	1.12	1.10	1.08	1.07	1.05	1.04	1.04	1.03	1.02	1.02	1.02	1.01	1.01
25	1.20	1.16	1.13	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.02	1.01
26	1.20	1.16	1.13	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.02	1.01
27	1.20	1.16	1.13	1.11	1.09	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02
28	1.21	1.16	1.13	1.11	1.09	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02
29	1.21	1.16	1.13	1.11	1.09	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02
30	1.21	1.17	1.13	1.11	1.09	1.07	1.06	1.05	1.05	1.04	1.03	1.03	1.03	1.02	1.02
31	1.21	1.17	1.13	1.11	1.09	1.08	1.06	1.05	1.05	1.04	1.03	1.03	1.03	1.02	1.02
32	1.21	1.17	1.13	1.11	1.09	1.08	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.02	1.02
33	1.21	1.17	1.14	1.11	1.09	1.08	1.06	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02
34	1.21	1.17	1.14	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02
35	1.21	1.17	1.14	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
36	1.21	1.17	1.14	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
37		1.17	1.14	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
38			1.14	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
39				1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
40					1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
41						1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
42							1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
43								1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
44									1.05	1.04	1.04	1.03	1.03	1.03	1.02
45										1.04	1.04	1.03	1.03	1.03	1.03
46											1.04	1.03	1.03	1.03	1.03
47												1.03	1.03	1.03	1.03
48													1.03	1.03	1.03
49														1.03	1.03
50															1.03

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-14. Factors for Calculating Red Pine Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.44	0.46	0.47	0.48	0.49	0.49	0.50	0.51	0.51	0.51	0.52	0.52	0.52	0.53	0.53
11	0.64	0.64	0.65	0.65	0.65	0.65	0.66	0.66	0.66	0.66	0.66	0.67	0.67	0.67	0.67
12	0.77	0.77	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
13	0.86	0.85	0.84	0.84	0.83	0.83	0.83	0.83	0.83	0.82	0.82	0.82	0.82	0.82	0.83
14	0.93	0.91	0.90	0.89	0.89	0.88	0.88	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
15	0.98	0.96	0.94	0.93	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90
16	1.01	0.99	0.97	0.96	0.95	0.94	0.94	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.92
17	1.04	1.02	1.00	0.98	0.97	0.97	0.96	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94
18	1.07	1.04	1.02	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.95	0.95	0.95
19	1.09	1.06	1.03	1.02	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.96	0.96	0.96
20	1.10	1.07	1.05	1.03	1.02	1.00	1.00	0.99	0.98	0.98	0.98	0.98	0.97	0.97	0.97
21	1.12	1.08	1.06	1.04	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98	0.98	0.98	0.98
22	1.13	1.09	1.07	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.99	0.98	0.98
23	1.15	1.10	1.08	1.05	1.04	1.03	1.02	1.01	1.00	1.00	1.00	0.99	0.99	0.99	0.99
24		1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99	0.99
25		1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99
26			1.10	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	1.00	1.00
27			1.10	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	1.00
28				1.08	1.06	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00	1.00
29				1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
30				1.09	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
31					1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
32					1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.01	1.00
33					1.07	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00
34					1.07	1.06	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.01
35					1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01
36						1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01
37						1.06	1.05	1.04	1.03	1.02	1.02	1.02	1.01	1.01	1.01
38						1.06	1.05	1.04	1.03	1.02	1.02	1.02	1.01	1.01	1.01
39						1.06	1.05	1.04	1.03	1.02	1.02	1.02	1.01	1.01	1.01
40							1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
41							1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
42							1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
43								1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
44									1.03	1.03	1.02	1.02	1.01	1.01	1.01
45										1.03	1.02	1.02	1.01	1.01	1.01
46											1.02	1.02	1.02	1.01	1.01
47												1.02	1.02	1.01	1.01
48													1.02	1.01	1.01
49														1.01	1.01
50															1.01

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-15. Factors for Calculating Red Pine Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH (cm)	Total Lorey's Height of Sawlog Trees in Metres												
	12	13	14	15	16	17	18	19	20	21	22	23	24
16	0.91	0.89	0.88	0.87	0.86	0.86	0.85	0.84	0.84	0.84	0.83	0.83	0.83
17	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.88	0.88	0.87	0.87
18	0.99	0.98	0.96	0.95	0.94	0.93	0.93	0.92	0.92	0.91	0.91	0.90	0.90
19	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.93	0.93	0.93
20	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.95
21	1.06	1.04	1.03	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96
22	1.07	1.05	1.04	1.03	1.01	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97
23	1.08	1.06	1.05	1.04	1.02	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98
24	1.09	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.00	1.00	1.00	0.99	0.99
25	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
26	1.10	1.08	1.07	1.06	1.04	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00
27	1.11	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.00
28	1.11	1.09	1.08	1.06	1.05	1.04	1.04	1.03	1.02	1.02	1.02	1.01	1.01
29	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01
30	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.02	1.02	1.02	1.01
31	1.12	1.10	1.09	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02
32	1.12	1.10	1.09	1.07	1.06	1.05	1.05	1.04	1.03	1.03	1.02	1.02	1.02
33	1.13	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02
34	1.13	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02
35	1.13	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.03	1.02
36	1.13	1.11	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.03	1.03	1.03	1.02
37	1.13	1.11	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.02
38	1.13	1.11	1.10	1.08	1.07	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.03
39	1.13	1.11	1.10	1.08	1.07	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.03
40	1.13	1.11	1.10	1.08	1.07	1.06	1.06	1.05	1.04	1.04	1.03	1.03	1.03
41	1.13	1.11	1.10	1.08	1.07	1.06	1.06	1.05	1.04	1.04	1.03	1.03	1.03
42	1.13	1.11	1.10	1.08	1.07	1.06	1.06	1.05	1.04	1.04	1.03	1.03	1.03
43	1.13	1.11	1.10	1.09	1.07	1.06	1.06	1.05	1.04	1.04	1.04	1.03	1.03
44		1.12	1.10	1.09	1.07	1.07	1.06	1.05	1.04	1.04	1.04	1.03	1.03
45			1.10	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.04	1.03	1.03
46				1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.04	1.03	1.03
47					1.08	1.07	1.06	1.05	1.05	1.04	1.04	1.03	1.03
48						1.07	1.06	1.05	1.05	1.04	1.04	1.03	1.03
49							1.06	1.05	1.05	1.04	1.04	1.03	1.03
50								1.05	1.05	1.04	1.04	1.03	1.03
51									1.05	1.04	1.04	1.03	1.03
52										1.04	1.04	1.03	1.03
53											1.04	1.03	1.03
54												1.03	1.03
55													1.03

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 10.16 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Softwood Sawlog Volume (m^3/ha) in Table 3.

Table A5-16. Factors for Calculating White Pine Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.70	0.67	0.66	0.64	0.63	0.63	0.62	0.61	0.61	0.61	0.60	0.60	0.60	0.60	0.60
11	0.83	0.80	0.78	0.77	0.75	0.74	0.74	0.73	0.72	0.72	0.72	0.71	0.71	0.71	0.71
12	0.92	0.89	0.86	0.85	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.79	0.79	0.78	0.78
13	0.98	0.95	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.84	0.84	0.84	0.84	0.83
14	1.02	0.99	0.96	0.94	0.93	0.91	0.90	0.90	0.89	0.88	0.88	0.88	0.87	0.87	0.87
15	1.06	1.02	0.99	0.97	0.95	0.94	0.93	0.92	0.92	0.91	0.91	0.90	0.90	0.90	0.90
16	1.08	1.04	1.01	0.99	0.98	0.96	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.92	0.92
17	1.10	1.06	1.03	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.94	0.93	0.93
18	1.11	1.07	1.04	1.02	1.01	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.95	0.94
19	1.12	1.08	1.06	1.03	1.02	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.95
20	1.13	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.96	0.96
21	1.14	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.98	0.98	0.97	0.97	0.97
22	1.15	1.11	1.08	1.05	1.04	1.02	1.01	1.00	1.00	0.99	0.98	0.98	0.98	0.97	0.97
23	1.15	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.99	0.98	0.98	0.98
24	1.16	1.12	1.09	1.06	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.98	0.98
25	1.16	1.12	1.09	1.07	1.05	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99	0.98
26	1.16	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.00	1.00	1.00	0.99	0.99	0.99
27	1.17	1.13	1.10	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99
28	1.17	1.13	1.10	1.07	1.06	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99
29	1.17	1.13	1.10	1.08	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	0.99
30	1.17	1.13	1.10	1.08	1.06	1.05	1.03	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99
31	1.18	1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	1.00
32	1.18	1.14	1.11	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
33	1.18	1.14	1.11	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
34	1.18	1.14	1.11	1.08	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
35	1.18	1.14	1.11	1.08	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
36	1.18	1.14	1.11	1.09	1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00
37		1.14	1.11	1.09	1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00
38			1.11	1.09	1.07	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00
39				1.09	1.07	1.06	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00
40					1.07	1.06	1.04	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00
41						1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00
42							1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01
43								1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01
44									1.03	1.02	1.02	1.01	1.01	1.01	1.01
45										1.02	1.02	1.02	1.01	1.01	1.01
46											1.02	1.02	1.01	1.01	1.01
47												1.02	1.01	1.01	1.01
48													1.01	1.01	1.01
49														1.01	1.01
50															1.01

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-17. Factors for Calculating White Pine Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.42	0.44	0.45	0.46	0.47	0.48	0.48	0.49	0.49	0.50	0.50	0.51	0.51	0.51	0.52
11	0.59	0.60	0.60	0.61	0.61	0.62	0.62	0.62	0.62	0.63	0.63	0.63	0.63	0.64	0.64
12	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.72	0.72	0.72	0.72	0.72
13	0.79	0.79	0.78	0.78	0.78	0.78	0.78	0.77	0.77	0.78	0.78	0.78	0.78	0.78	0.78
14	0.86	0.85	0.84	0.83	0.83	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
15	0.91	0.89	0.88	0.87	0.87	0.86	0.86	0.86	0.85	0.85	0.85	0.85	0.85	0.85	0.85
16	0.94	0.93	0.91	0.90	0.90	0.89	0.89	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
17	0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.89	0.89	0.89
18	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.91	0.91
19	1.02	1.00	0.98	0.96	0.95	0.94	0.94	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.92
20	1.04	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.94	0.93	0.93	0.93	0.93
21	1.06	1.03	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94
22	1.07	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95
23	1.09	1.05	1.03	1.01	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.95	0.95	0.95
24	1.10	1.06	1.04	1.02	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.96
25	1.13	1.07	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.96	0.96	0.96
26		1.09	1.05	1.03	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.96
27			1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.98	0.97	0.97	0.97	0.97
28			1.07	1.04	1.03	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.97	0.97	0.97
29				1.05	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.98	0.97
30				1.06	1.04	1.02	1.01	1.00	0.99	0.99	0.99	0.98	0.98	0.98	0.98
31					1.04	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.98	0.98	0.98
32						1.03	1.02	1.01	1.00	0.99	0.99	0.99	0.98	0.98	0.98
33						1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.98	0.98
34							1.02	1.01	1.01	1.00	0.99	0.99	0.99	0.99	0.98
35							1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.99
36								1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.99
37								1.02	1.01	1.00	1.00	1.00	0.99	0.99	0.99
38									1.01	1.01	1.00	1.00	0.99	0.99	0.99
39									1.02	1.01	1.00	1.00	1.00	0.99	0.99
40										1.01	1.00	1.00	1.00	0.99	0.99
41										1.01	1.01	1.00	1.00	0.99	0.99
42										1.02	1.01	1.00	1.00	1.00	0.99
43											1.01	1.00	1.00	1.00	0.99
44											1.01	1.00	1.00	1.00	1.00
45												1.01	1.00	1.00	1.00
46												1.01	1.00	1.00	1.00
47												1.01	1.00	1.00	1.00
48													1.00	1.00	1.00
49														1.00	1.00
50															1.00

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-18. Factors for Calculating White Pine Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
16	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.80	0.79	0.79	0.79
17	0.91	0.89	0.88	0.87	0.86	0.86	0.85	0.84	0.84	0.84	0.83	0.83	0.83
18	0.94	0.93	0.91	0.90	0.90	0.89	0.88	0.88	0.87	0.87	0.86	0.86	0.86
19	0.97	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.90	0.89	0.89	0.89	0.88
20	0.99	0.98	0.96	0.95	0.94	0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90
21	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.92
22	1.02	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.94	0.94	0.94	0.93	0.93
23	1.04	1.02	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.94	0.94
24	1.05	1.03	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96	0.96	0.95	0.95
25	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96
26	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.96
27	1.07	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.98	0.98	0.98	0.97	0.97
28	1.07	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.97
29	1.08	1.06	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98	0.98
30	1.08	1.06	1.05	1.03	1.02	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98
31	1.08	1.07	1.05	1.04	1.03	1.02	1.01	1.00	1.00	1.00	0.99	0.99	0.99
32	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99
33	1.09	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	0.99	0.99
34	1.09	1.07	1.06	1.05	1.03	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99
35	1.09	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99
36	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
37	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
38	1.10	1.08	1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00
39	1.10	1.08	1.07	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.00	1.00
40	1.10	1.08	1.07	1.06	1.04	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00
41	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00
42	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00
43	1.11	1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
44		1.09	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
45			1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
46				1.06	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
47					1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01
48						1.04	1.04	1.03	1.02	1.02	1.02	1.01	1.01
49							1.04	1.03	1.02	1.02	1.02	1.01	1.01
50								1.03	1.02	1.02	1.02	1.01	1.01
51									1.03	1.02	1.02	1.01	1.01
52										1.02	1.02	1.01	1.01
53											1.02	1.01	1.01
54												1.01	1.01
55													1.01

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 10.16 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Softwood Sawlog Volume (m^3/ha) in Table 3.

Table A5-19. Factors for Calculating Hemlock Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.72	0.70	0.68	0.66	0.65	0.64	0.63	0.62	0.62	0.61	0.61	0.60	0.60	0.59	0.59
11	0.86	0.82	0.80	0.78	0.76	0.75	0.74	0.73	0.73	0.72	0.71	0.71	0.71	0.70	0.70
12	0.94	0.91	0.88	0.86	0.84	0.83	0.82	0.81	0.80	0.79	0.79	0.78	0.77	0.77	0.77
13	1.00	0.96	0.93	0.91	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.83	0.82	0.82	0.81
14	1.04	1.00	0.97	0.95	0.93	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.86	0.85	0.85
15	1.07	1.03	1.00	0.98	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.87	0.87
16	1.10	1.05	1.02	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89	0.89
17	1.11	1.07	1.04	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.92	0.91	0.91	0.90
18	1.13	1.08	1.05	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.92	0.91
19	1.14	1.09	1.06	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.92	0.92
20	1.14	1.10	1.07	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.93
21	1.15	1.11	1.07	1.05	1.03	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.94	0.94	0.93
22	1.16	1.11	1.08	1.05	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94
23	1.16	1.12	1.08	1.06	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94
24	1.17	1.12	1.09	1.06	1.04	1.02	1.01	0.99	0.98	0.97	0.97	0.96	0.95	0.95	0.94
25	1.17	1.12	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95
26	1.17	1.13	1.09	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95
27	1.17	1.13	1.09	1.07	1.05	1.03	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.95
28	1.18	1.13	1.10	1.07	1.05	1.03	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96	0.95
29	1.18	1.13	1.10	1.07	1.05	1.03	1.02	1.00	0.99	0.98	0.98	0.97	0.96	0.96	0.95
30	1.18	1.13	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95
31	1.18	1.14	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96
32	1.18	1.14	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96
33	1.18	1.14	1.10	1.08	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96
34	1.18	1.14	1.10	1.08	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96
35	1.19	1.14	1.10	1.08	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96
36	1.19	1.14	1.11	1.08	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96
37		1.14	1.11	1.08	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96
38			1.11	1.08	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.96
39				1.08	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.96
40					1.06	1.04	1.03	1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
41						1.04	1.03	1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
42							1.03	1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
43								1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
44									1.00	0.99	0.99	0.98	0.97	0.97	0.96
45										1.00	0.99	0.98	0.97	0.97	0.96
46											0.99	0.98	0.97	0.97	0.96
47												0.98	0.97	0.97	0.96
48													0.97	0.97	0.96
49														0.97	0.96
50															0.96

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1.

Table A5-20. Factors for Calculating Hemlock Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.45	0.46	0.47	0.48	0.49	0.49	0.50	0.50	0.50	0.51	0.51	0.51	0.51	0.51	0.52
11	0.62	0.62	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
12	0.74	0.73	0.73	0.73	0.72	0.72	0.72	0.72	0.72	0.71	0.71	0.71	0.71	0.71	0.71
13	0.82	0.81	0.80	0.80	0.79	0.78	0.78	0.78	0.77	0.77	0.77	0.77	0.77	0.76	0.76
14	0.88	0.87	0.86	0.85	0.84	0.83	0.83	0.82	0.82	0.81	0.81	0.81	0.81	0.80	0.80
15	0.93	0.91	0.89	0.88	0.87	0.86	0.86	0.85	0.85	0.84	0.84	0.84	0.83	0.83	0.83
16	0.97	0.94	0.93	0.91	0.90	0.89	0.88	0.88	0.87	0.87	0.86	0.86	0.86	0.85	0.85
17	1.00	0.97	0.95	0.93	0.92	0.91	0.90	0.90	0.89	0.89	0.88	0.88	0.87	0.87	0.87
18	1.02	0.99	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.90	0.89	0.89	0.89	0.88	0.88
19	1.04	1.01	0.99	0.97	0.95	0.94	0.93	0.92	0.92	0.91	0.91	0.90	0.90	0.89	0.89
20	1.06	1.02	1.00	0.98	0.96	0.95	0.94	0.93	0.93	0.92	0.91	0.91	0.91	0.90	0.90
21	1.07	1.04	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.92	0.91	0.91	0.91
22	1.09	1.05	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.92	0.91	0.91
23	1.10	1.06	1.03	1.01	0.99	0.98	0.96	0.95	0.95	0.94	0.93	0.93	0.92	0.92	0.92
24	1.12	1.07	1.04	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.93	0.92	0.92
25		1.08	1.04	1.02	1.00	0.99	0.97	0.96	0.96	0.95	0.94	0.94	0.93	0.93	0.92
26		1.09	1.05	1.03	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.93	0.93
27			1.06	1.03	1.01	1.00	0.98	0.97	0.96	0.96	0.95	0.94	0.94	0.93	0.93
28			1.07	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.93
29				1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.93
30				1.05	1.02	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.94	0.94	0.94
31				1.06	1.03	1.01	0.99	0.98	0.97	0.97	0.96	0.95	0.95	0.94	0.94
32					1.03	1.01	1.00	0.98	0.98	0.97	0.96	0.95	0.95	0.94	0.94
33					1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.94	0.94
34						1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94
35						1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94
36						1.02	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.95	0.94
37							1.01	0.99	0.98	0.97	0.97	0.96	0.95	0.95	0.94
38							1.01	0.99	0.98	0.98	0.97	0.96	0.96	0.95	0.95
39							1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95
40							1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95
41								1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95
42								1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95
43								1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95
44									0.99	0.98	0.97	0.97	0.96	0.95	0.95
45										0.98	0.97	0.97	0.96	0.95	0.95
46											0.97	0.97	0.96	0.95	0.95
47												0.97	0.96	0.96	0.95
48													0.96	0.96	0.95
49														0.96	0.95
50															0.95

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Softwood Volume (m^3/ha) in Table 1

Table A5-21. Factors for Calculating Hemlock Sawlog Volume (m³/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
16	0.87	0.86	0.84	0.83	0.82	0.81	0.80	0.79	0.79	0.78	0.78	0.77	0.77
17	0.92	0.90	0.88	0.87	0.86	0.85	0.84	0.83	0.83	0.82	0.81	0.81	0.80
18	0.95	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.84	0.84	0.83
19	0.97	0.96	0.94	0.92	0.91	0.90	0.89	0.88	0.88	0.87	0.86	0.86	0.85
20	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.88	0.87
21	1.01	0.99	0.97	0.96	0.95	0.93	0.92	0.92	0.91	0.90	0.90	0.89	0.89
22	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.90
23	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.92	0.91	0.91
24	1.04	1.02	1.00	0.99	0.98	0.96	0.95	0.95	0.94	0.93	0.92	0.92	0.91
25	1.05	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.92	0.92
26	1.06	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.92
27	1.06	1.04	1.02	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.93	0.93
28	1.07	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.94	0.93
29	1.07	1.05	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94
30	1.07	1.05	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94
31	1.08	1.05	1.04	1.02	1.01	0.99	0.98	0.98	0.97	0.96	0.95	0.95	0.94
32	1.08	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.94
33	1.08	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95
34	1.08	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.95
35	1.09	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96	0.95
36	1.09	1.06	1.05	1.03	1.02	1.00	0.99	0.98	0.98	0.97	0.96	0.96	0.95
37	1.09	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95
38	1.09	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.95
39	1.09	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.95
40	1.09	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96
41	1.09	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96
42	1.09	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96
43	1.09	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96
44		1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96
45			1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96
46				1.04	1.03	1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
47					1.03	1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
48						1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
49							1.00	0.99	0.99	0.98	0.97	0.97	0.96
50								1.00	0.99	0.98	0.97	0.97	0.96
51									0.99	0.98	0.97	0.97	0.96
52										0.98	0.97	0.97	0.96
53											0.97	0.97	0.96
54												0.97	0.96
55													0.96

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 10.16 cm (tree-length).

To obtain Sawlog Volume (m³/ha), multiply factor by corresponding Softwood Sawlog Volume (m³/ha) in Table 3.

Appendix 5B

Hardwood Species Diameter Correction Factors

Following are Tables containing species-specific diameter class correction factors for merchantable volume, shortwood volume, and sawlog volume. Tables are presented in the order of:

Maple (Red and Sugar)
Yellow Birch
White Birch
Red Oak
Trembling Aspen

Table A5-22. Factors for Calculating Maple Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.73	0.71	0.69	0.68	0.67	0.66	0.65	0.65	0.64	0.64	0.64	0.64	0.64	0.64	0.63
11	0.87	0.84	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.76	0.75	0.75	0.75	0.75	0.75
12	0.95	0.92	0.89	0.88	0.86	0.85	0.84	0.84	0.83	0.83	0.83	0.82	0.82	0.82	0.82
13	1.01	0.97	0.95	0.93	0.91	0.90	0.89	0.89	0.88	0.88	0.87	0.87	0.87	0.87	0.87
14	1.05	1.01	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.90
15	1.08	1.04	1.01	0.99	0.97	0.96	0.95	0.94	0.94	0.93	0.93	0.93	0.93	0.92	0.92
16	1.10	1.06	1.03	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94	0.94
17	1.11	1.07	1.04	1.02	1.01	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.95	0.95
18	1.13	1.08	1.06	1.03	1.02	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.96	0.96
19	1.13	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.97	0.97	0.97
20	1.14	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.98	0.98
21	1.15	1.11	1.08	1.05	1.04	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.98	0.98	0.98
22	1.15	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.99	0.98
23	1.16	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99	0.99
24	1.16	1.12	1.09	1.06	1.05	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99	0.99
25	1.16	1.12	1.09	1.07	1.05	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99
26	1.16	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	1.00	0.99
27	1.17	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	1.00	1.00
28	1.17	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.01	1.00	1.00	1.00	1.00
29	1.17	1.13	1.09	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	1.00
30	1.17	1.13	1.10	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00	1.00
31	1.17	1.13	1.10	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00	1.00
32	1.17	1.13	1.10	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00	1.00
33	1.17	1.13	1.10	1.07	1.06	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00	1.00
34	1.17	1.13	1.10	1.08	1.06	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.01	1.00	1.00
35	1.17	1.13	1.10	1.08	1.06	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
36	1.17	1.13	1.10	1.08	1.06	1.05	1.03	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
37		1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
38			1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.00	1.00
39				1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
40					1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
41						1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
42							1.04	1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
43								1.03	1.02	1.02	1.01	1.01	1.01	1.01	1.00
44									1.02	1.02	1.01	1.01	1.01	1.01	1.00
45										1.02	1.01	1.01	1.01	1.01	1.00
46											1.01	1.01	1.01	1.01	1.01
47												1.01	1.01	1.01	1.01
48													1.01	1.01	1.01
49														1.01	1.01
50															1.01

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-23. Factors for Calculating Maple Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.42	0.44	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.52	0.53	0.53	0.54	0.54	0.54
11	0.60	0.61	0.62	0.62	0.63	0.63	0.64	0.64	0.65	0.65	0.65	0.66	0.66	0.66	0.67
12	0.72	0.72	0.72	0.72	0.72	0.73	0.73	0.73	0.73	0.74	0.74	0.74	0.74	0.75	0.75
13	0.80	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.80	0.80	0.80
14	0.86	0.85	0.84	0.84	0.83	0.83	0.83	0.83	0.83	0.83	0.84	0.84	0.84	0.84	0.84
15	0.90	0.89	0.88	0.87	0.87	0.87	0.86	0.86	0.86	0.86	0.87	0.87	0.87	0.87	0.87
16	0.93	0.92	0.91	0.90	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
17	0.96	0.94	0.93	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91
18	0.98	0.96	0.94	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
19	0.99	0.97	0.96	0.95	0.94	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
20	1.01	0.98	0.97	0.96	0.95	0.94	0.94	0.94	0.93	0.93	0.93	0.93	0.93	0.93	0.93
21	1.02	0.99	0.98	0.96	0.96	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
22	1.02	1.00	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94
23	1.03	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
24	1.04	1.01	0.99	0.98	0.97	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.95
25	1.04	1.02	1.00	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95
26	1.05	1.02	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
27	1.05	1.02	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
28	1.05	1.03	1.01	0.99	0.98	0.97	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.96	0.96
29	1.06	1.03	1.01	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.96	0.96
30	1.06	1.03	1.01	1.00	0.99	0.98	0.97	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.96
31	1.06	1.03	1.01	1.00	0.99	0.98	0.97	0.97	0.97	0.97	0.96	0.96	0.96	0.96	0.96
32	1.06	1.03	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.96	0.96	0.96	0.96
33	1.06	1.03	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
34	1.07	1.04	1.02	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
35	1.07	1.04	1.02	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
36	1.07	1.04	1.02	1.00	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
37		1.04	1.02	1.00	0.99	0.98	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97
38			1.02	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97
39				1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97
40					0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97
41						0.99	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97
42							0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97
43								0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.97
44									0.97	0.97	0.97	0.97	0.97	0.97	0.97
45										0.97	0.97	0.97	0.97	0.97	0.97
46											0.97	0.97	0.97	0.97	0.97
47												0.97	0.97	0.97	0.97
48													0.97	0.97	0.97
49														0.97	0.97
50															0.97

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-24. Factors for Calculating Maple Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
22	0.39	0.37	0.35	0.33	0.32	0.31	0.30	0.29	0.29	0.28	0.28	0.27	0.27
23	0.60	0.56	0.53	0.51	0.49	0.47	0.46	0.45	0.44	0.43	0.42	0.41	0.41
24	0.77	0.72	0.68	0.65	0.63	0.61	0.59	0.57	0.56	0.55	0.54	0.53	0.52
25	0.91	0.85	0.80	0.77	0.74	0.71	0.69	0.67	0.66	0.64	0.63	0.62	0.61
26	1.02	0.96	0.91	0.86	0.83	0.80	0.78	0.76	0.74	0.72	0.71	0.70	0.69
27	1.11	1.04	0.99	0.94	0.91	0.87	0.85	0.82	0.81	0.79	0.77	0.76	0.75
28	1.19	1.12	1.06	1.01	0.97	0.94	0.91	0.88	0.86	0.84	0.83	0.81	0.80
29	1.26	1.18	1.12	1.06	1.02	0.99	0.96	0.93	0.91	0.89	0.87	0.86	0.85
30	1.31	1.23	1.17	1.11	1.07	1.03	1.00	0.97	0.95	0.93	0.91	0.90	0.88
31	1.36	1.28	1.21	1.15	1.11	1.07	1.03	1.01	0.98	0.96	0.94	0.93	0.91
32	1.40	1.31	1.24	1.19	1.14	1.10	1.07	1.04	1.01	0.99	0.97	0.95	0.94
33	1.44	1.35	1.27	1.22	1.17	1.13	1.09	1.06	1.04	1.01	1.00	0.98	0.96
34	1.47	1.38	1.30	1.24	1.19	1.15	1.11	1.08	1.06	1.04	1.02	1.00	0.98
35	1.49	1.40	1.32	1.26	1.21	1.17	1.13	1.10	1.08	1.05	1.03	1.02	1.00
36	1.52	1.42	1.34	1.28	1.23	1.19	1.15	1.12	1.09	1.07	1.05	1.03	1.02
37	1.54	1.44	1.36	1.30	1.25	1.20	1.17	1.13	1.11	1.08	1.06	1.05	1.03
38	1.55	1.46	1.38	1.31	1.26	1.22	1.18	1.15	1.12	1.10	1.08	1.06	1.04
39	1.57	1.47	1.39	1.33	1.27	1.23	1.19	1.16	1.13	1.11	1.09	1.07	1.05
40	1.58	1.48	1.40	1.34	1.29	1.24	1.20	1.17	1.14	1.12	1.10	1.08	1.06
41	1.60	1.50	1.42	1.35	1.30	1.25	1.21	1.18	1.15	1.13	1.10	1.09	1.07
42	1.61	1.51	1.42	1.36	1.30	1.26	1.22	1.19	1.16	1.13	1.11	1.09	1.08
43	1.62	1.51	1.43	1.37	1.31	1.27	1.23	1.19	1.16	1.14	1.12	1.10	1.08
44		1.52	1.44	1.37	1.32	1.27	1.23	1.20	1.17	1.15	1.12	1.10	1.09
45			1.45	1.38	1.33	1.28	1.24	1.21	1.18	1.15	1.13	1.11	1.09
46				1.39	1.33	1.28	1.24	1.21	1.18	1.16	1.13	1.12	1.10
47					1.34	1.29	1.25	1.22	1.19	1.16	1.14	1.12	1.10
48						1.29	1.25	1.22	1.19	1.16	1.14	1.12	1.11
49							1.26	1.22	1.19	1.17	1.15	1.13	1.11
50								1.23	1.20	1.17	1.15	1.13	1.11
51									1.20	1.17	1.15	1.13	1.12
52										1.18	1.16	1.14	1.12
53											1.16	1.14	1.12
54												1.14	1.12
55													1.13

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 20.32 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Hardwood Sawlog Volume (m^3/ha) in Table 10.

Table A5-25. Factors for Calculating Yellow Birch Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.76	0.73	0.71	0.69	0.68	0.67	0.66	0.65	0.65	0.64	0.64	0.63	0.63	0.63	0.62
11	0.88	0.84	0.82	0.80	0.78	0.77	0.76	0.75	0.74	0.74	0.73	0.73	0.72	0.72	0.72
12	0.96	0.92	0.89	0.87	0.85	0.84	0.83	0.82	0.81	0.80	0.80	0.79	0.79	0.79	0.78
13	1.01	0.97	0.94	0.92	0.90	0.89	0.87	0.87	0.86	0.85	0.84	0.84	0.83	0.83	0.83
14	1.05	1.01	0.98	0.96	0.94	0.92	0.91	0.90	0.89	0.88	0.88	0.87	0.87	0.86	0.86
15	1.08	1.04	1.01	0.98	0.96	0.95	0.93	0.92	0.92	0.91	0.90	0.90	0.89	0.89	0.88
16	1.11	1.06	1.03	1.00	0.98	0.97	0.95	0.94	0.93	0.93	0.92	0.91	0.91	0.90	0.90
17	1.12	1.08	1.04	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.92	0.91
18	1.14	1.09	1.06	1.03	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.93	0.93	0.93
19	1.15	1.10	1.07	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.94	0.94	0.93
20	1.16	1.11	1.08	1.05	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94
21	1.17	1.12	1.08	1.06	1.04	1.02	1.01	0.99	0.98	0.98	0.97	0.96	0.96	0.95	0.95
22	1.17	1.13	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.95
23	1.18	1.13	1.09	1.07	1.05	1.03	1.02	1.00	0.99	0.99	0.98	0.97	0.97	0.96	0.96
24	1.18	1.13	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.96
25	1.19	1.14	1.10	1.08	1.05	1.04	1.02	1.01	1.00	0.99	0.99	0.98	0.97	0.97	0.96
26	1.19	1.14	1.11	1.08	1.06	1.04	1.03	1.01	1.00	1.00	0.99	0.98	0.98	0.97	0.97
27	1.19	1.14	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97
28	1.20	1.15	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.97
29	1.20	1.15	1.11	1.09	1.06	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.98	0.98	0.97
30	1.20	1.15	1.12	1.09	1.07	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.98	0.98	0.98
31	1.20	1.15	1.12	1.09	1.07	1.05	1.04	1.02	1.01	1.01	1.00	0.99	0.99	0.98	0.98
32	1.20	1.15	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98
33	1.20	1.16	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98
34	1.21	1.16	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.98	0.98
35	1.21	1.16	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.98
36	1.21	1.16	1.12	1.10	1.07	1.06	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.98
37		1.16	1.12	1.10	1.07	1.06	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.98
38			1.12	1.10	1.07	1.06	1.04	1.03	1.02	1.01	1.01	1.00	0.99	0.99	0.98
39				1.10	1.08	1.06	1.04	1.03	1.02	1.01	1.01	1.00	0.99	0.99	0.98
40					1.08	1.06	1.04	1.03	1.02	1.01	1.01	1.00	0.99	0.99	0.98
41						1.06	1.05	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99
42							1.05	1.03	1.02	1.02	1.01	1.00	1.00	0.99	0.99
43								1.03	1.02	1.02	1.01	1.00	1.00	0.99	0.99
44									1.02	1.02	1.01	1.00	1.00	0.99	0.99
45										1.02	1.01	1.00	1.00	0.99	0.99
46											1.01	1.00	1.00	0.99	0.99
47												1.00	1.00	0.99	0.99
48													1.00	0.99	0.99
49														0.99	0.99
50															0.99

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-26. Factors for Calculating Yellow Birch Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.38	0.41	0.43	0.45	0.46	0.47	0.48	0.49	0.49	0.50	0.50	0.51	0.51	0.52	0.52
11	0.54	0.56	0.57	0.58	0.59	0.60	0.60	0.61	0.61	0.61	0.62	0.62	0.62	0.62	0.63
12	0.65	0.66	0.67	0.68	0.68	0.68	0.68	0.69	0.69	0.69	0.69	0.69	0.70	0.70	0.70
13	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.75	0.75	0.75	0.75	0.75	0.75	0.75
14	0.80	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
15	0.84	0.84	0.83	0.83	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.81	0.81
16	0.88	0.87	0.86	0.86	0.85	0.85	0.85	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
17	0.91	0.89	0.89	0.88	0.87	0.87	0.87	0.86	0.86	0.86	0.86	0.86	0.86	0.85	0.85
18	0.93	0.92	0.90	0.90	0.89	0.89	0.88	0.88	0.88	0.87	0.87	0.87	0.87	0.87	0.87
19	0.95	0.93	0.92	0.91	0.90	0.90	0.89	0.89	0.89	0.89	0.88	0.88	0.88	0.88	0.88
20	0.96	0.95	0.93	0.92	0.92	0.91	0.91	0.90	0.90	0.90	0.89	0.89	0.89	0.89	0.89
21	0.98	0.96	0.94	0.93	0.93	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.89
22	0.99	0.97	0.95	0.94	0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.91	0.90	0.90	0.90
23	1.00	0.98	0.96	0.95	0.94	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.91
24	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91
25	1.01	0.99	0.98	0.96	0.95	0.94	0.94	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.91
26	1.02	1.00	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.93	0.93	0.92	0.92	0.92	0.92
27	1.03	1.00	0.99	0.97	0.96	0.95	0.95	0.94	0.94	0.93	0.93	0.93	0.93	0.92	0.92
28	1.03	1.01	0.99	0.98	0.96	0.96	0.95	0.94	0.94	0.94	0.93	0.93	0.93	0.93	0.92
29	1.04	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.94	0.93	0.93	0.93	0.93
30	1.04	1.02	1.00	0.98	0.97	0.96	0.96	0.95	0.94	0.94	0.94	0.93	0.93	0.93	0.93
31	1.04	1.02	1.00	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.94	0.94	0.93	0.93	0.93
32	1.05	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.95	0.94	0.94	0.94	0.93	0.93
33	1.05	1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.94	0.94	0.94	0.93
34	1.05	1.03	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.94	0.94	0.94	0.93
35	1.06	1.03	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94	0.94	0.94
36	1.06	1.03	1.01	0.99	0.98	0.97	0.97	0.96	0.95	0.95	0.95	0.94	0.94	0.94	0.94
37		1.03	1.01	1.00	0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94	0.94
38			1.01	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94	0.94
39				1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94	0.94
40					0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.95	0.94	0.94
41						0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94
42							0.97	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94
43								0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94
44									0.96	0.96	0.95	0.95	0.95	0.95	0.94
45										0.96	0.95	0.95	0.95	0.95	0.94
46											0.96	0.95	0.95	0.95	0.94
47												0.95	0.95	0.95	0.94
48													0.95	0.95	0.94
49														0.95	0.95
50															0.95

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-27. Factors for Calculating Yellow Birch Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
22	0.53	0.49	0.47	0.45	0.43	0.41	0.40	0.39	0.38	0.37	0.36	0.35	0.35
23	0.70	0.65	0.62	0.59	0.56	0.54	0.52	0.51	0.49	0.48	0.47	0.46	0.45
24	0.84	0.78	0.74	0.70	0.67	0.65	0.62	0.61	0.59	0.58	0.56	0.55	0.54
25	0.95	0.89	0.84	0.80	0.76	0.73	0.71	0.69	0.67	0.65	0.64	0.63	0.62
26	1.05	0.98	0.92	0.88	0.84	0.81	0.78	0.76	0.74	0.72	0.70	0.69	0.68
27	1.13	1.05	0.99	0.94	0.90	0.87	0.84	0.81	0.79	0.77	0.76	0.74	0.73
28	1.20	1.12	1.05	1.00	0.96	0.92	0.89	0.86	0.84	0.82	0.80	0.79	0.77
29	1.25	1.17	1.10	1.05	1.00	0.97	0.93	0.91	0.88	0.86	0.84	0.82	0.81
30	1.30	1.22	1.15	1.09	1.04	1.00	0.97	0.94	0.92	0.89	0.87	0.86	0.84
31	1.35	1.26	1.19	1.13	1.08	1.04	1.00	0.97	0.95	0.92	0.90	0.88	0.87
32	1.39	1.29	1.22	1.16	1.11	1.07	1.03	1.00	0.97	0.95	0.93	0.91	0.89
33	1.42	1.33	1.25	1.19	1.14	1.09	1.06	1.02	1.00	0.97	0.95	0.93	0.91
34	1.45	1.35	1.28	1.21	1.16	1.11	1.08	1.04	1.02	0.99	0.97	0.95	0.93
35	1.47	1.38	1.30	1.23	1.18	1.13	1.10	1.06	1.03	1.01	0.99	0.97	0.95
36	1.50	1.40	1.32	1.25	1.20	1.15	1.11	1.08	1.05	1.02	1.00	0.98	0.96
37	1.52	1.42	1.34	1.27	1.21	1.17	1.13	1.09	1.06	1.04	1.01	0.99	0.98
38	1.54	1.43	1.35	1.28	1.23	1.18	1.14	1.11	1.08	1.05	1.03	1.01	0.99
39	1.55	1.45	1.37	1.30	1.24	1.19	1.15	1.12	1.09	1.06	1.04	1.02	1.00
40	1.57	1.46	1.38	1.31	1.25	1.20	1.16	1.13	1.10	1.07	1.05	1.03	1.01
41	1.58	1.47	1.39	1.32	1.26	1.21	1.17	1.14	1.11	1.08	1.06	1.03	1.02
42	1.59	1.49	1.40	1.33	1.27	1.22	1.18	1.15	1.12	1.09	1.06	1.04	1.02
43	1.60	1.50	1.41	1.34	1.28	1.23	1.19	1.15	1.12	1.10	1.07	1.05	1.03
44		1.51	1.42	1.35	1.29	1.24	1.20	1.16	1.13	1.10	1.08	1.06	1.04
45			1.43	1.36	1.30	1.25	1.20	1.17	1.14	1.11	1.08	1.06	1.04
46				1.36	1.30	1.25	1.21	1.17	1.14	1.11	1.09	1.07	1.05
47					1.31	1.26	1.22	1.18	1.15	1.12	1.09	1.07	1.05
48						1.26	1.22	1.18	1.15	1.12	1.10	1.08	1.06
49							1.23	1.19	1.16	1.13	1.10	1.08	1.06
50								1.19	1.16	1.13	1.11	1.08	1.07
51									1.16	1.14	1.11	1.09	1.07
52										1.14	1.11	1.09	1.07
53											1.12	1.09	1.08
54												1.10	1.08
55													1.08

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 20.32 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Hardwood Sawlog Volume (m^3/ha) in Table 10.

Table A5-28. Factors for Calculating White Birch Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.81	0.77	0.74	0.72	0.70	0.68	0.67	0.66	0.65	0.64	0.63	0.63	0.62	0.61	0.61
11	0.94	0.90	0.86	0.84	0.81	0.80	0.78	0.77	0.76	0.74	0.74	0.73	0.72	0.71	0.70
12	1.03	0.98	0.95	0.92	0.89	0.87	0.86	0.84	0.83	0.82	0.80	0.80	0.79	0.78	0.77
13	1.10	1.05	1.01	0.97	0.95	0.93	0.91	0.89	0.88	0.87	0.85	0.84	0.83	0.83	0.82
14	1.14	1.09	1.05	1.01	0.99	0.96	0.95	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85
15	1.18	1.12	1.08	1.05	1.02	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88
16	1.21	1.15	1.10	1.07	1.04	1.02	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90
17	1.23	1.17	1.12	1.09	1.06	1.03	1.01	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91
18	1.24	1.18	1.14	1.10	1.07	1.05	1.03	1.01	0.99	0.98	0.97	0.96	0.94	0.93	0.92
19	1.26	1.20	1.15	1.11	1.08	1.06	1.04	1.02	1.00	0.99	0.98	0.97	0.95	0.94	0.94
20	1.27	1.21	1.16	1.12	1.09	1.07	1.05	1.03	1.01	1.00	0.99	0.97	0.96	0.95	0.94
21	1.28	1.22	1.17	1.13	1.10	1.08	1.06	1.04	1.02	1.01	0.99	0.98	0.97	0.96	0.95
22	1.29	1.23	1.18	1.14	1.11	1.08	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96
23	1.29	1.23	1.18	1.15	1.12	1.09	1.07	1.05	1.03	1.02	1.00	0.99	0.98	0.97	0.96
24	1.30	1.24	1.19	1.15	1.12	1.09	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.97	0.97
25	1.30	1.24	1.19	1.16	1.12	1.10	1.08	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97
26	1.31	1.25	1.20	1.16	1.13	1.10	1.08	1.06	1.04	1.03	1.02	1.00	0.99	0.98	0.97
27	1.31	1.25	1.20	1.16	1.13	1.11	1.08	1.06	1.05	1.03	1.02	1.01	0.99	0.98	0.97
28	1.32	1.25	1.20	1.17	1.13	1.11	1.09	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98
29	1.32	1.26	1.21	1.17	1.14	1.11	1.09	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.98
30	1.32	1.26	1.21	1.17	1.14	1.11	1.09	1.07	1.05	1.04	1.03	1.01	1.00	0.99	0.98
31	1.32	1.26	1.21	1.17	1.14	1.11	1.09	1.07	1.06	1.04	1.03	1.01	1.00	0.99	0.98
32	1.33	1.26	1.21	1.17	1.14	1.12	1.09	1.07	1.06	1.04	1.03	1.02	1.00	0.99	0.98
33	1.33	1.26	1.21	1.18	1.14	1.12	1.10	1.08	1.06	1.04	1.03	1.02	1.01	1.00	0.99
34	1.33	1.27	1.22	1.18	1.15	1.12	1.10	1.08	1.06	1.05	1.03	1.02	1.01	1.00	0.99
35	1.33	1.27	1.22	1.18	1.15	1.12	1.10	1.08	1.06	1.05	1.03	1.02	1.01	1.00	0.99
36	1.33	1.27	1.22	1.18	1.15	1.12	1.10	1.08	1.06	1.05	1.03	1.02	1.01	1.00	0.99
37		1.27	1.22	1.18	1.15	1.12	1.10	1.08	1.06	1.05	1.03	1.02	1.01	1.00	0.99
38			1.22	1.18	1.15	1.12	1.10	1.08	1.06	1.05	1.04	1.02	1.01	1.00	0.99
39				1.18	1.15	1.12	1.10	1.08	1.07	1.05	1.04	1.02	1.01	1.00	0.99
40					1.15	1.13	1.10	1.08	1.07	1.05	1.04	1.02	1.01	1.00	0.99
41						1.13	1.10	1.08	1.07	1.05	1.04	1.03	1.01	1.00	0.99
42							1.10	1.08	1.07	1.05	1.04	1.03	1.01	1.00	0.99
43								1.09	1.07	1.05	1.04	1.03	1.02	1.00	0.99
44									1.07	1.05	1.04	1.03	1.02	1.00	0.99
45										1.05	1.04	1.03	1.02	1.01	1.00
46											1.04	1.03	1.02	1.01	1.00
47												1.03	1.02	1.01	1.00
48													1.02	1.01	1.00
49														1.01	1.00
50															1.00

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-29. Factors for Calculating White Birch Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.44	0.46	0.48	0.49	0.49	0.50	0.50	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
11	0.61	0.62	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.62	0.62	0.62
12	0.74	0.74	0.73	0.73	0.73	0.72	0.72	0.72	0.71	0.71	0.71	0.71	0.70	0.70	0.70
13	0.83	0.82	0.81	0.80	0.80	0.79	0.78	0.78	0.77	0.77	0.77	0.76	0.76	0.75	0.75
14	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.79
15	0.95	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.84	0.83	0.83	0.82	0.82
16	0.99	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.85	0.84
17	1.02	0.99	0.97	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.87	0.86	0.86
18	1.05	1.02	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.87
19	1.07	1.04	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.89
20	1.09	1.06	1.03	1.01	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.92	0.91	0.90	0.90
21	1.10	1.07	1.04	1.02	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.91	0.90
22	1.12	1.08	1.05	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.91
23	1.13	1.09	1.06	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.92
24	1.14	1.10	1.07	1.05	1.03	1.01	1.00	0.98	0.97	0.96	0.95	0.95	0.94	0.93	0.92
25	1.15	1.11	1.08	1.05	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.93
26	1.16	1.12	1.09	1.06	1.04	1.02	1.01	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.93
27	1.16	1.12	1.09	1.07	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93
28	1.17	1.13	1.10	1.07	1.05	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.94
29	1.17	1.13	1.10	1.07	1.05	1.03	1.02	1.01	0.99	0.98	0.97	0.96	0.96	0.95	0.94
30	1.18	1.14	1.10	1.08	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.94
31	1.18	1.14	1.11	1.08	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.94
32	1.19	1.15	1.11	1.08	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.95
33	1.19	1.15	1.11	1.09	1.06	1.05	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95
34	1.20	1.15	1.12	1.09	1.07	1.05	1.03	1.02	1.01	0.99	0.98	0.97	0.97	0.96	0.95
35	1.20	1.15	1.12	1.09	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95
36	1.20	1.16	1.12	1.09	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95
37		1.16	1.12	1.10	1.07	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95
38			1.13	1.10	1.07	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95
39				1.10	1.08	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.96
40					1.08	1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.96	0.96
41						1.06	1.04	1.03	1.01	1.00	0.99	0.98	0.97	0.97	0.96
42							1.04	1.03	1.02	1.00	0.99	0.98	0.97	0.97	0.96
43								1.03	1.02	1.01	0.99	0.98	0.98	0.97	0.96
44									1.02	1.01	1.00	0.99	0.98	0.97	0.96
45										1.01	1.00	0.99	0.98	0.97	0.96
46											1.00	0.99	0.98	0.97	0.96
47												0.99	0.98	0.97	0.96
48													0.98	0.97	0.96
49														0.97	0.96
50															0.96

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-30. Factors for Calculating White Birch Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
22	0.52	0.48	0.45	0.43	0.41	0.39	0.38	0.36	0.35	0.34	0.33	0.33	0.32
23	0.70	0.65	0.61	0.58	0.55	0.53	0.51	0.49	0.47	0.46	0.45	0.44	0.43
24	0.85	0.79	0.74	0.70	0.67	0.64	0.61	0.59	0.57	0.55	0.54	0.53	0.51
25	0.97	0.90	0.85	0.80	0.76	0.73	0.70	0.68	0.65	0.63	0.62	0.60	0.59
26	1.08	1.00	0.94	0.89	0.84	0.81	0.77	0.75	0.72	0.70	0.68	0.67	0.65
27	1.17	1.08	1.01	0.96	0.91	0.87	0.84	0.81	0.78	0.76	0.74	0.72	0.70
28	1.24	1.15	1.08	1.02	0.97	0.93	0.89	0.86	0.83	0.81	0.78	0.76	0.75
29	1.31	1.21	1.13	1.07	1.02	0.97	0.94	0.90	0.87	0.85	0.82	0.80	0.78
30	1.36	1.26	1.18	1.12	1.06	1.02	0.97	0.94	0.91	0.88	0.86	0.84	0.82
31	1.41	1.31	1.22	1.16	1.10	1.05	1.01	0.97	0.94	0.91	0.89	0.87	0.85
32	1.45	1.35	1.26	1.19	1.13	1.08	1.04	1.00	0.97	0.94	0.91	0.89	0.87
33	1.49	1.38	1.29	1.22	1.16	1.11	1.07	1.03	0.99	0.96	0.94	0.91	0.89
34	1.52	1.41	1.32	1.25	1.19	1.13	1.09	1.05	1.02	0.99	0.96	0.93	0.91
35	1.55	1.44	1.35	1.27	1.21	1.16	1.11	1.07	1.03	1.00	0.98	0.95	0.93
36	1.58	1.46	1.37	1.29	1.23	1.17	1.13	1.09	1.05	1.02	0.99	0.97	0.95
37	1.60	1.48	1.39	1.31	1.25	1.19	1.14	1.10	1.07	1.03	1.01	0.98	0.96
38	1.62	1.50	1.41	1.33	1.26	1.21	1.16	1.12	1.08	1.05	1.02	0.99	0.97
39	1.64	1.52	1.42	1.34	1.28	1.22	1.17	1.13	1.09	1.06	1.03	1.01	0.98
40	1.66	1.53	1.44	1.36	1.29	1.23	1.18	1.14	1.10	1.07	1.04	1.02	0.99
41	1.67	1.55	1.45	1.37	1.30	1.24	1.19	1.15	1.11	1.08	1.05	1.02	1.00
42	1.68	1.56	1.46	1.38	1.31	1.25	1.20	1.16	1.12	1.09	1.06	1.03	1.01
43	1.70	1.57	1.47	1.39	1.32	1.26	1.21	1.17	1.13	1.10	1.07	1.04	1.02
44		1.58	1.48	1.40	1.33	1.27	1.22	1.18	1.14	1.10	1.07	1.05	1.02
45			1.49	1.41	1.34	1.28	1.23	1.18	1.15	1.11	1.08	1.05	1.03
46				1.42	1.35	1.29	1.24	1.19	1.15	1.12	1.09	1.06	1.04
47					1.35	1.29	1.24	1.20	1.16	1.12	1.09	1.07	1.04
48						1.30	1.25	1.20	1.16	1.13	1.10	1.07	1.05
49							1.25	1.21	1.17	1.13	1.10	1.08	1.05
50								1.21	1.17	1.14	1.11	1.08	1.05
51									1.18	1.14	1.11	1.08	1.06
52										1.15	1.12	1.09	1.06
53											1.12	1.09	1.07
54												1.09	1.07
55													1.07

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 20.32 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Hardwood Sawlog Volume (m^3/ha) in Table 10.

Table A5-31. Factors for Calculating Red Oak Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.80	0.77	0.75	0.73	0.72	0.70	0.69	0.69	0.68	0.67	0.67	0.67	0.66	0.66	0.65
11	0.95	0.91	0.88	0.86	0.84	0.83	0.82	0.81	0.80	0.79	0.79	0.78	0.78	0.77	0.77
12	1.04	1.00	0.97	0.94	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.85	0.84
13	1.10	1.06	1.03	1.00	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.90	0.89
14	1.15	1.10	1.07	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.94	0.93	0.93
15	1.18	1.13	1.10	1.07	1.05	1.03	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.95
16	1.20	1.15	1.12	1.09	1.06	1.05	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.97	0.97
17	1.22	1.17	1.13	1.10	1.08	1.06	1.05	1.03	1.02	1.01	1.01	1.00	0.99	0.99	0.98
18	1.23	1.18	1.14	1.11	1.09	1.07	1.06	1.04	1.03	1.02	1.02	1.01	1.00	1.00	0.99
19	1.24	1.19	1.15	1.12	1.10	1.08	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00
20	1.25	1.20	1.16	1.13	1.11	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01
21	1.25	1.20	1.16	1.14	1.11	1.09	1.08	1.06	1.05	1.04	1.04	1.03	1.02	1.02	1.01
22	1.26	1.21	1.17	1.14	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.01
23	1.26	1.21	1.17	1.14	1.12	1.10	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.02	1.02
24	1.27	1.22	1.18	1.15	1.12	1.10	1.09	1.07	1.06	1.05	1.05	1.04	1.03	1.03	1.02
25	1.27	1.22	1.18	1.15	1.12	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.03	1.03	1.02
26	1.27	1.22	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.02
27	1.27	1.22	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03
28	1.28	1.22	1.18	1.15	1.13	1.11	1.10	1.08	1.07	1.06	1.05	1.05	1.04	1.03	1.03
29	1.28	1.23	1.19	1.16	1.13	1.11	1.10	1.08	1.07	1.06	1.05	1.05	1.04	1.03	1.03
30	1.28	1.23	1.19	1.16	1.13	1.11	1.10	1.08	1.07	1.06	1.06	1.05	1.04	1.04	1.03
31	1.28	1.23	1.19	1.16	1.13	1.11	1.10	1.09	1.07	1.06	1.06	1.05	1.04	1.04	1.03
32	1.28	1.23	1.19	1.16	1.13	1.11	1.10	1.09	1.07	1.07	1.06	1.05	1.04	1.04	1.03
33	1.28	1.23	1.19	1.16	1.13	1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03
34	1.28	1.23	1.19	1.16	1.14	1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03
35	1.28	1.23	1.19	1.16	1.14	1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.04	1.04	1.03
36	1.28	1.23	1.19	1.16	1.14	1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.03
37		1.23	1.19	1.16	1.14	1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.03
38			1.19	1.16	1.14	1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.03
39				1.16	1.14	1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.03
40					1.14	1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.03
41						1.12	1.10	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.04
42							1.10	1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.04
43								1.09	1.08	1.07	1.06	1.05	1.05	1.04	1.04
44									1.08	1.07	1.06	1.05	1.05	1.04	1.04
45										1.07	1.06	1.05	1.05	1.04	1.04
46											1.06	1.05	1.05	1.04	1.04
47												1.05	1.05	1.04	1.04
48													1.05	1.04	1.04
49														1.04	1.04
50															1.04

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-32. Factors for Calculating Red Oak Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.46	0.48	0.50	0.51	0.52	0.53	0.53	0.54	0.54	0.55	0.55	0.55	0.56	0.56	0.56
11	0.65	0.66	0.67	0.67	0.67	0.68	0.68	0.68	0.68	0.68	0.69	0.69	0.69	0.69	0.69
12	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
13	0.87	0.86	0.86	0.85	0.85	0.84	0.84	0.84	0.84	0.83	0.83	0.83	0.83	0.83	0.83
14	0.94	0.92	0.91	0.90	0.90	0.89	0.89	0.88	0.88	0.88	0.88	0.87	0.87	0.87	0.87
15	0.98	0.97	0.95	0.94	0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.90
16	1.02	1.00	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.93	0.93	0.93	0.92	0.92	0.92
17	1.05	1.02	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.95	0.94	0.94	0.94	0.93
18	1.07	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.95	0.95	0.95
19	1.09	1.06	1.04	1.02	1.01	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.96	0.96
20	1.10	1.07	1.05	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.96
21	1.11	1.08	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.99	0.98	0.98	0.98	0.97	0.97
22	1.12	1.09	1.06	1.05	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98	0.98	0.97
23	1.13	1.10	1.07	1.05	1.04	1.03	1.02	1.01	1.00	1.00	0.99	0.99	0.98	0.98	0.98
24	1.13	1.10	1.08	1.06	1.04	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.98	0.98
25	1.14	1.11	1.08	1.06	1.05	1.03	1.02	1.02	1.01	1.00	1.00	0.99	0.99	0.99	0.98
26	1.14	1.11	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99	0.99
27	1.15	1.11	1.09	1.07	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99	0.99
28	1.15	1.12	1.09	1.07	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	0.99	0.99
29	1.15	1.12	1.09	1.07	1.06	1.04	1.03	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.99
30	1.16	1.12	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.01	1.01	1.00	1.00	1.00	0.99
31	1.16	1.12	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.01	1.01	1.01	1.00	1.00	0.99
32	1.16	1.12	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	0.99
33	1.16	1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
34	1.17	1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
35	1.17	1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00	1.00
36	1.17	1.13	1.10	1.08	1.06	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.00	1.00	1.00
37		1.13	1.10	1.08	1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00
38			1.10	1.08	1.07	1.05	1.04	1.03	1.03	1.02	1.01	1.01	1.01	1.00	1.00
39				1.08	1.07	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.00	1.00
40					1.07	1.05	1.04	1.03	1.03	1.02	1.02	1.01	1.01	1.00	1.00
41						1.05	1.04	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00
42							1.04	1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00
43								1.04	1.03	1.02	1.02	1.01	1.01	1.00	1.00
44									1.03	1.02	1.02	1.01	1.01	1.00	1.00
45										1.02	1.02	1.01	1.01	1.00	1.00
46											1.02	1.01	1.01	1.00	1.00
47												1.01	1.01	1.00	1.00
48													1.01	1.00	1.00
49														1.01	1.00
50															1.00

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-33. Factors for Calculating Red Oak Sawlog Volume (m³/ha) at Different Sawlog QDBH. *

QDBH (cm)	Total Lorey's Height of Sawlog Trees in Metres												
	12	13	14	15	16	17	18	19	20	21	22	23	24
22	0.42	0.39	0.37	0.35	0.34	0.33	0.32	0.31	0.30	0.29	0.29	0.28	0.28
23	0.64	0.60	0.57	0.54	0.52	0.50	0.48	0.47	0.45	0.44	0.43	0.43	0.42
24	0.82	0.77	0.73	0.69	0.66	0.64	0.61	0.60	0.58	0.57	0.55	0.54	0.53
25	0.97	0.91	0.86	0.81	0.78	0.75	0.72	0.70	0.68	0.67	0.65	0.64	0.63
26	1.09	1.02	0.96	0.92	0.88	0.84	0.81	0.79	0.77	0.75	0.73	0.72	0.70
27	1.19	1.12	1.05	1.00	0.96	0.92	0.89	0.86	0.84	0.82	0.80	0.78	0.77
28	1.28	1.19	1.13	1.07	1.02	0.98	0.95	0.92	0.89	0.87	0.85	0.84	0.82
29	1.35	1.26	1.19	1.13	1.08	1.04	1.00	0.97	0.94	0.92	0.90	0.88	0.86
30	1.41	1.32	1.24	1.18	1.13	1.08	1.05	1.01	0.99	0.96	0.94	0.92	0.90
31	1.46	1.36	1.29	1.22	1.17	1.12	1.08	1.05	1.02	1.00	0.97	0.95	0.94
32	1.51	1.40	1.32	1.26	1.20	1.15	1.11	1.08	1.05	1.02	1.00	0.98	0.96
33	1.54	1.44	1.36	1.29	1.23	1.18	1.14	1.11	1.08	1.05	1.03	1.01	0.99
34	1.58	1.47	1.38	1.32	1.26	1.21	1.17	1.13	1.10	1.07	1.05	1.03	1.01
35	1.60	1.50	1.41	1.34	1.28	1.23	1.19	1.15	1.12	1.09	1.07	1.04	1.02
36	1.63	1.52	1.43	1.36	1.30	1.25	1.21	1.17	1.14	1.11	1.08	1.06	1.04
37	1.65	1.54	1.45	1.38	1.32	1.26	1.22	1.18	1.15	1.12	1.10	1.07	1.05
38	1.67	1.56	1.47	1.39	1.33	1.28	1.23	1.20	1.16	1.13	1.11	1.09	1.07
39	1.69	1.57	1.48	1.41	1.34	1.29	1.25	1.21	1.18	1.15	1.12	1.10	1.08
40	1.70	1.59	1.49	1.42	1.36	1.30	1.26	1.22	1.19	1.16	1.13	1.11	1.09
41	1.71	1.60	1.51	1.43	1.37	1.31	1.27	1.23	1.19	1.16	1.14	1.11	1.09
42	1.73	1.61	1.52	1.44	1.38	1.32	1.28	1.24	1.20	1.17	1.15	1.12	1.10
43	1.74	1.62	1.53	1.45	1.38	1.33	1.28	1.24	1.21	1.18	1.15	1.13	1.11
44		1.63	1.53	1.46	1.39	1.34	1.29	1.25	1.22	1.19	1.16	1.14	1.11
45			1.54	1.46	1.40	1.34	1.30	1.26	1.22	1.19	1.16	1.14	1.12
46				1.47	1.40	1.35	1.30	1.26	1.23	1.20	1.17	1.15	1.12
47					1.41	1.36	1.31	1.27	1.23	1.20	1.17	1.15	1.13
48						1.36	1.31	1.27	1.24	1.21	1.18	1.15	1.13
49							1.32	1.28	1.24	1.21	1.18	1.16	1.14
50								1.28	1.24	1.21	1.19	1.16	1.14
51									1.25	1.22	1.19	1.16	1.14
52										1.22	1.19	1.17	1.14
53											1.19	1.17	1.15
54												1.17	1.15
55													1.15

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 20.32 cm(tree-length)

To obtain Sawlog Volume (m³/ha), multiply factor by corresponding Hardwood Sawlog Volume (m³/ha) in Table 10.

Table A5-34. Factors for Calculating Trembling Aspen Merchantable Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.71	0.69	0.68	0.67	0.67	0.67	0.67	0.67	0.67	0.68	0.68	0.69	0.69	0.70	0.71
11	0.83	0.81	0.80	0.79	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.81	0.82	0.82	0.83
12	0.92	0.89	0.88	0.87	0.86	0.86	0.86	0.87	0.87	0.87	0.88	0.89	0.89	0.90	0.91
13	0.97	0.95	0.93	0.92	0.92	0.91	0.91	0.92	0.92	0.93	0.93	0.94	0.95	0.95	0.96
14	1.01	0.98	0.97	0.96	0.95	0.95	0.95	0.95	0.96	0.96	0.97	0.98	0.98	0.99	1.00
15	1.04	1.01	0.99	0.98	0.98	0.97	0.98	0.98	0.98	0.99	0.99	1.00	1.01	1.02	1.03
16	1.06	1.03	1.01	1.00	1.00	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.04
17	1.07	1.04	1.03	1.02	1.01	1.01	1.01	1.01	1.01	1.02	1.03	1.03	1.04	1.05	1.06
18	1.08	1.05	1.04	1.03	1.02	1.02	1.02	1.02	1.02	1.03	1.04	1.04	1.05	1.06	1.07
19	1.09	1.06	1.04	1.03	1.03	1.03	1.03	1.03	1.03	1.04	1.04	1.05	1.06	1.07	1.08
20	1.10	1.07	1.05	1.04	1.03	1.03	1.03	1.03	1.04	1.04	1.05	1.06	1.07	1.08	1.08
21	1.10	1.07	1.06	1.05	1.04	1.04	1.04	1.04	1.04	1.05	1.06	1.06	1.07	1.08	1.09
22	1.11	1.08	1.06	1.05	1.04	1.04	1.04	1.04	1.05	1.05	1.06	1.07	1.08	1.08	1.09
23	1.11	1.08	1.06	1.05	1.05	1.04	1.04	1.05	1.05	1.06	1.06	1.07	1.08	1.09	1.10
24	1.11	1.09	1.07	1.06	1.05	1.05	1.05	1.05	1.05	1.06	1.07	1.07	1.08	1.09	1.10
25	1.12	1.09	1.07	1.06	1.05	1.05	1.05	1.05	1.06	1.06	1.07	1.08	1.08	1.09	1.10
26	1.12	1.09	1.07	1.06	1.05	1.05	1.05	1.05	1.06	1.06	1.07	1.08	1.09	1.10	1.10
27	1.12	1.09	1.07	1.06	1.05	1.05	1.05	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.11
28	1.12	1.09	1.07	1.06	1.06	1.05	1.05	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.11
29	1.12	1.09	1.08	1.06	1.06	1.05	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.11
30	1.12	1.10	1.08	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.08	1.08	1.09	1.10	1.11
31	1.13	1.10	1.08	1.07	1.06	1.06	1.06	1.06	1.06	1.07	1.08	1.08	1.09	1.10	1.11
32	1.13	1.10	1.08	1.07	1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.09	1.10	1.11
33	1.13	1.10	1.08	1.07	1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.09	1.10	1.11
34	1.13	1.10	1.08	1.07	1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.09	1.10	1.11
35	1.13	1.10	1.08	1.07	1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.10	1.11
36	1.13	1.10	1.08	1.07	1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.10	1.11
37		1.10	1.08	1.07	1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.11	1.11
38			1.08	1.07	1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.11	1.11
39				1.07	1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.11	1.12
40					1.06	1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.11	1.12
41						1.06	1.06	1.06	1.07	1.07	1.08	1.09	1.10	1.11	1.12
42							1.06	1.07	1.07	1.08	1.08	1.09	1.10	1.11	1.12
43								1.07	1.07	1.08	1.08	1.09	1.10	1.11	1.12
44									1.07	1.08	1.08	1.09	1.10	1.11	1.12
45										1.08	1.08	1.09	1.10	1.11	1.12
46											1.08	1.09	1.10	1.11	1.12
47												1.09	1.10	1.11	1.12
48													1.10	1.11	1.12
49														1.11	1.12
50															1.12

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump and top dib 7.62 cm (tree length).

To obtain Merchantable Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-35. Factors for Calculating Trembling Aspen Shortwood Volume (m^3/ha) at Different Merchantable QDBH. *

QDBH	Total Lorey's Height of Merchantable Trees in Metres														
(cm)	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
10	0.41	0.43	0.45	0.47	0.49	0.50	0.51	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.60
11	0.58	0.59	0.61	0.62	0.63	0.64	0.65	0.67	0.68	0.69	0.70	0.71	0.72	0.73	0.74
12	0.69	0.70	0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.80	0.81	0.82	0.83
13	0.77	0.77	0.78	0.78	0.79	0.80	0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89
14	0.82	0.82	0.83	0.83	0.84	0.85	0.85	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.94
15	0.87	0.86	0.86	0.87	0.87	0.88	0.89	0.89	0.90	0.91	0.92	0.93	0.94	0.96	0.97
16	0.90	0.89	0.89	0.89	0.90	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99
17	0.92	0.91	0.91	0.91	0.92	0.92	0.93	0.94	0.94	0.95	0.96	0.97	0.98	1.00	1.01
18	0.94	0.93	0.93	0.93	0.93	0.94	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01	1.02
19	0.95	0.94	0.94	0.94	0.94	0.95	0.95	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03
20	0.97	0.96	0.95	0.95	0.95	0.96	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04
21	0.98	0.96	0.96	0.96	0.96	0.96	0.97	0.98	0.98	0.99	1.00	1.01	1.02	1.03	1.04
22	0.99	0.97	0.97	0.96	0.97	0.97	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04	1.05
23	0.99	0.98	0.97	0.97	0.97	0.97	0.98	0.99	0.99	1.00	1.01	1.02	1.03	1.04	1.05
24	1.00	0.98	0.98	0.97	0.97	0.98	0.98	0.99	1.00	1.01	1.02	1.03	1.04	1.05	1.06
25	1.00	0.99	0.98	0.98	0.98	0.98	0.99	0.99	1.00	1.01	1.02	1.03	1.04	1.05	1.06
26	1.01	0.99	0.98	0.98	0.98	0.98	0.99	1.00	1.00	1.01	1.02	1.03	1.04	1.05	1.06
27	1.01	0.99	0.99	0.98	0.98	0.99	0.99	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06
28	1.01	1.00	0.99	0.99	0.99	0.99	0.99	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.07
29	1.02	1.00	0.99	0.99	0.99	0.99	1.00	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.07
30	1.02	1.00	0.99	0.99	0.99	0.99	1.00	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.07
31	1.02	1.00	0.99	0.99	0.99	0.99	1.00	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.07
32	1.02	1.00	1.00	0.99	0.99	0.99	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07
33	1.02	1.01	1.00	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07
34	1.02	1.01	1.00	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07
35	1.03	1.01	1.00	0.99	0.99	1.00	1.00	1.01	1.02	1.02	1.03	1.04	1.05	1.06	1.07
36	1.03	1.01	1.00	1.00	1.00	1.00	1.00	1.01	1.02	1.02	1.03	1.04	1.05	1.06	1.07
37		1.01	1.00	1.00	1.00	1.00	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.08
38			1.00	1.00	1.00	1.00	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.07	1.08
39				1.00	1.00	1.00	1.00	1.01	1.02	1.03	1.04	1.04	1.06	1.07	1.08
40					1.00	1.00	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08
41						1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08
42							1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08
43								1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08
44									1.02	1.03	1.04	1.05	1.06	1.07	1.08
45										1.03	1.04	1.05	1.06	1.07	1.08
46											1.04	1.05	1.06	1.07	1.08
47												1.05	1.06	1.07	1.08
48													1.06	1.07	1.08
49														1.07	1.08
50															1.08

* Based on gross merchantable volume (solid wood, inside bark) with 0.15 m stump, top dib 7.62 cm, and 1.22 m subtracted from merchantable height.

To obtain Shortwood Volume (m^3/ha), multiply factor by corresponding Merchantable Hardwood Volume (m^3/ha) in Table 8.

Table A5-36. Factors for Calculating Trembling Aspen Sawlog Volume (m^3/ha) at Different Sawlog QDBH. *

QDBH	Total Lorey's Height of Sawlog Trees in Metres												
(cm)	12	13	14	15	16	17	18	19	20	21	22	23	24
22	0.39	0.37	0.36	0.34	0.34	0.33	0.32	0.32	0.31	0.31	0.31	0.31	0.31
23	0.60	0.57	0.55	0.53	0.51	0.50	0.49	0.48	0.48	0.47	0.47	0.47	0.46
24	0.77	0.73	0.70	0.67	0.66	0.64	0.63	0.62	0.61	0.60	0.60	0.59	0.59
25	0.91	0.86	0.82	0.80	0.77	0.75	0.74	0.73	0.72	0.71	0.70	0.70	0.69
26	1.02	0.97	0.93	0.89	0.87	0.85	0.83	0.82	0.80	0.80	0.79	0.78	0.78
27	1.12	1.06	1.01	0.98	0.95	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.85
28	1.20	1.13	1.08	1.04	1.01	0.99	0.97	0.95	0.94	0.93	0.92	0.91	0.91
29	1.26	1.20	1.14	1.10	1.07	1.04	1.02	1.00	0.99	0.98	0.97	0.96	0.96
30	1.32	1.25	1.19	1.15	1.12	1.09	1.07	1.05	1.03	1.02	1.01	1.00	1.00
31	1.37	1.29	1.24	1.19	1.16	1.13	1.10	1.09	1.07	1.06	1.05	1.04	1.04
32	1.41	1.33	1.27	1.23	1.19	1.16	1.14	1.12	1.10	1.09	1.08	1.07	1.07
33	1.44	1.37	1.31	1.26	1.22	1.19	1.17	1.14	1.13	1.12	1.11	1.10	1.09
34	1.47	1.39	1.33	1.28	1.25	1.21	1.19	1.17	1.15	1.14	1.13	1.12	1.11
35	1.50	1.42	1.36	1.31	1.27	1.24	1.21	1.19	1.17	1.16	1.15	1.14	1.13
36	1.52	1.44	1.38	1.33	1.29	1.26	1.23	1.21	1.19	1.18	1.17	1.16	1.15
37	1.54	1.46	1.40	1.35	1.30	1.27	1.25	1.22	1.21	1.19	1.18	1.17	1.17
38	1.56	1.48	1.41	1.36	1.32	1.29	1.26	1.24	1.22	1.21	1.19	1.19	1.18
39	1.58	1.49	1.43	1.37	1.33	1.30	1.27	1.25	1.23	1.22	1.21	1.20	1.19
40	1.59	1.50	1.44	1.39	1.34	1.31	1.28	1.26	1.24	1.23	1.22	1.21	1.20
41	1.60	1.52	1.45	1.40	1.35	1.32	1.29	1.27	1.25	1.24	1.23	1.22	1.21
42	1.61	1.53	1.46	1.41	1.36	1.33	1.30	1.28	1.26	1.25	1.23	1.23	1.22
43	1.62	1.54	1.47	1.41	1.37	1.34	1.31	1.29	1.27	1.25	1.24	1.23	1.23
44		1.54	1.48	1.42	1.38	1.34	1.32	1.29	1.28	1.26	1.25	1.24	1.23
45			1.48	1.43	1.39	1.35	1.32	1.30	1.28	1.27	1.25	1.25	1.24
46				1.44	1.39	1.36	1.33	1.31	1.29	1.27	1.26	1.25	1.24
47					1.40	1.36	1.33	1.31	1.29	1.28	1.27	1.26	1.25
48						1.37	1.34	1.32	1.30	1.28	1.27	1.26	1.25
49							1.34	1.32	1.30	1.29	1.27	1.26	1.26
50								1.32	1.30	1.29	1.28	1.27	1.26
51									1.31	1.29	1.28	1.27	1.26
52										1.30	1.28	1.27	1.27
53											1.29	1.28	1.27
54												1.28	1.27
55													1.28

* Based on gross sawlog volume (solid wood, inside bark) with 0.15 m stump and top dib 20.32 cm (tree-length).

To obtain Sawlog Volume (m^3/ha), multiply factor by corresponding Hardwood Sawlog Volume (m^3/ha) in Table 10.